New Orleans Medical

and

Surgical Journal

Vol. 83 OCTOBER, 1930 No 4

DIAGNOSIS AND TREATMENT OF RUPTURED GASTRIC AND DUODENAL ULCERS.*

GILRUTH DARRINGTON, M. D.,

YAZOO CITY, MISS.

It is not my purpose to attempt to go into the causes, diagnosis and treatment of that very common gastric disturbance, ulcer. I only wish to discuss very briefly that alarming condition that arises when this ulcer finally erodes through the entire wall of the duodenum or stomach.

Duodenal ulcers are about three times as common as gastric ulcers and both are about three times as common in men as in women. It has been variously estimated that anywhere from 6 per cent to 25 per cent of ulcers will perforate. Perforation of the duodenum is naturally more common than perforation of the stomach due to the fact that there are so many more duodenal than stomach ulcers. There is a very peculiar and striking thing about ulcers situated on the anterior wall of the stomach. Nearly all of them will perforate. That is about 85 per cent will. Fortunately ulcers of the anterior wall occur in only about 5 to 7 per cent. For example, we shall say out of 200 ulcers, 190 will be on the posterior wall and 4 will perforate. Ten will be on the anterior wall and 8 or 9 will perforate. Perforation occurs ten times as frequently in men as in women and one should be very cautious in making this diagnosis in the female. Personally I have never had such a case in a woman.

The first operation for acute perforation was done in 1880 by Mekulicz with fatal termination. The first successful operation was in 1892 by Heusner. The mortality in these early operations was around 50 per cent, which has been reduced to as low as 5 per cent in favorable cases—certainly a most creditable showing for modern surgery.

The diagnosis of this pathological picture is not always easy and simple and there are few occasions where an early diagnosis is more important for the welfare of your patient. Some surgeon of wide experience once remarked that in conditions where there were perforations along the alimentary tract the mortality increased between 5 per cent and 10 per cent an hour until surgical relief was given. Of course this is a rough and general estimate influenced by many factors. Yet at the same time it is a good rule for us to keep in mind and give grave consideration to, before we administer a hypodermic and await developments, as often the wait will develop in the death of your patient and quite a bit of your prestige.

In all surgical conditions the history is of great importance. Of course a previous history of digestive disturbance suggestive of ulcer should immediately put us on our guard. However, you will not always obtain this history and I warn you not to put too much faith in it as I have seen a few cases that came out of an apparently clear sky

*Read before the Section on Surgery at the Sixty-third Annual Session of the Mississippi State Medical Association, Vicksburg, May 13, 1930.

with an absolutely negative history in regards to an existing ulcer. I had two cases that followed a drinking spree. The irritating effect of the alcohol undoubtedly played a part in the erosion. The most important feature of the history is the onset with sudden severe pain in the abdomen coming on without warning and without any apparent cause. The suddenness of the onset is the important factor in differentiating it from other acute abdominal conditions where the pain starts somewhat mildly and gradually increases in severity. The pain comes on instantly as if the patient had been shot and is very intense.

When you first see one of these cases you will be struck by the look of distress on the patient's face and your examination will be done amid pleas for relief and expressions of agony. Often they will be sitting up in bed motionless and holding the abdomen with their hands. Usually they stay in one position for long periods of time, as movements seem to aggravate the pain. This is quite the contrast to a patient suffering with hepatic colic who is constantly shifting positions and is very restless, a point worth remembering in differentiating the two conditions.

When the hand is laid upon the abdomen one is immediately impressed by the extreme rigidity, absolutely boardlike in character. I know of no other abdominal condition that gives the marked rigidity that acute ruptured ulcer gives. Acute appendicitis, intesinal obstruction or none of the other common intra-abdominal conditions give such a rigid abdomen. The pain is mainly in the epigastric region and occasionally the patient will complain of pain above the clavicles. Why such a pain should be present, I do not know.

In such a picture you would naturally expect a fast thready pulse in keeping with the general picture of shock, but to the contrary during the first few hours you will find as a rule a slow full pulse, often under 75. This has puzzled me and I have never seen any explanation for it. It may be possible for the irritation to cause a reflex stimulation of the vagus nerve, which is the inhibitor of the heart, and thus produce a slow pulse. This slow pulse, what ever may cause it, often exists and we should not let it deceive us. The temperature is usually sub-normal. Some writers speak of the obliteration of normal liver dullness due to the escaped gases from the stomach. This sign has never been of much value to me as the abdomen is so tender that the patient won't permit much percussion.

The laboratory findings are useless and I do not think we should waste valuable time when the factor of time is so important in going through a long routine of laboratory procedures. The roentgen-ray will often show the presence of air below the diaphragm, but I am not stressing the value of this roentgen-ray finding as I regard the clinical signs and symptoms as the thing upon which our diagnosis should be made.

With such a picture, what shall be the procedure? There may be some doubt as just exactly what is wrong but frankly I don't see how any doctor could fail to recognize that he was dealing with some acute abdominal calamity and such a condition calls for an immediate exploration and investigation.

Just before the operation it is a good plan to give some dye, usually methylene blue. This will often serve as a guide in finding the hole in the viscera. If upon opening the peritoneal cavity there is an escape of gas we can feel reasonably sure that our deductions were correct. The cavity nearly always contains fluids which is usually a result of violent peritoneal irritation and this fluid is often mixed with stomach contents. The stomach and duodenum are inspected and the redness and inflammatory conditions surrounding the opening will serve as a guide in locating it. Likewise the presence of the blue dye will also serve the same purpose. If the perforation is in the duodenum, bile will nearly always be present in the peritoneal cavity. I remember this presence of bile in one of

my early cases led me to suspect a ruptured gall-bladder and I investigated that organ before inspecting the duodenum.

After locating the perforation and bringing it into the field of operation, what is the best procedure? The plan that I have adopted is as follows. With the small point of the actual cautery the edge of the ulcer is gently cauterized and the opening closed either with two purse string sutures or a small double row of Lemberts. This is reinforced and protected by tacking a piece of omentum over the sutures. As a routine that is all that is done. The idea in the use of the cautery is to stimulate the sluggish edge of the ulcer to a more rapid closure and also to destroy the ulcer. Gastro-enterostomy and pyloroplasty should be reserved for a later date, because very often the above described simple procedure will cure the ulcer and if it doesn't it is a rapid life saving operation. Later, after the recovery of the patient, if the symptoms of ulcer return, a second operation can be done at a selected time and some of the more extensive procedures for cure performed on a patient who is a much better surgical risk because his peritoneum is not contaminated and he is not in a condition of shock.

Sometimes the ulcer will be surrounded by such a wide area of induration that it is necessary to go beyond this hard mass to make the sutures hold. If this be the case and the closure of the opening impinges on the orifice of the duodenum or stomach to such an extent that it interferes with the passage of food, then there is no other alternative left but gastro-enterostomy. However, this is only to be done in the above described condition and not as a routine.

Before closing the abdomen a duodenal or Jutte tube is passed through the nose into the stomach where it can readily be felt and threaded into the duodenum about four inches beyond the site of the perforation. Through the tube liquids and predigested food may be given early and with safety until the ulcer is healed to the point where food will not interfere with its recovery.

The abdomen is closed in the usual manner and a drainage tube left in the pelvis for 24 to 48 hours. I know the tendency now is against drainage but it does not look logical to close a case of this kind up tight, when there is so much material, often foreign in character, loose in the abdomen.

Post-operatively, fluids in small amounts are given through the duodenal tube previously inserted. If the tube is not used the fluid requirement is sustained by proctoclysis and hypodermoclysis for about 24 hours when water by mouth is given at the rate of about one-half oz. every hour, gradually increasing the amount. Later liquid food and after a week a soft diet may be safely started. I am enthusiastic about the duodenal tube as it will certainly add to the comfort of the patient's convalesence.

The results obtained by this simple closure of the perforation are remarkably good, due to what Dr. W. J. Mayo is pleased to call the "curative effects of perforation," showing that after perforation and recovery of the patient from peritonitis the ulcer heals. He has duplicated nature's method in some cases, cut out the center of the ulcer, closed the opening and secured healing.

The largest series that I found in a recent review of the literature, of cases of acute perforation treated by simple closure, was a series reported by Dr. G. P. Gibson in an issue of the Journal of the American Medical Association. Dr. Gibson reports 123 cases operated upon. There were 23 deaths and 100 recoveries, an operative mortality of 18 per cent. Of the 100 surviving cases he was able to follow up 91. Seventy-two reported satisfactory results, most of them entirely free of symptoms. Nineteen required a second operation. So any procedure as simple as this, that will cure 75 per cent of the cases and require

a second operation in only 20 per cent seems to be the most logical one. Undoubtedly a gastro-enterostomy done routinely would certainly require fewer second operations. Also I am sure there would certainly be a much higher primary operative death rate.

In conclusion, let me again call attention to the outstanding symptom of perforated ulcer—sudden, excruciating, upper abdominal pain with extreme abdominal rigidity. The treatment should follow a rapid diagnosis and simple closure of the perforation, leaving the extensive operations for a more desirable time.

I realize in presenting this paper that I have given nothing new or original. I have simply tried to briefly describe this condition as I have found it in a practical way, in the hope that possibly it might be of some aid in recognizing these cases when you encountered them at the bed side. I may most appropriately and appreciately quote:

"I have gathered a posie of other men's flowers and nothing but the thread that binds them is mine own."

DISCUSSION.

Dr. S. W. Johnston, Vicksburg: I want to compliment Dr. Darrington; he was with me for two years in the hospital here, and I think he is doing wonderful work. He has brought out some very interesting points. It is a fact that perforation occurs mostly in men. Walton said that in fifty-nine cases only seven were in women. Acute gastric ulcer never perforates. Of course perforation on the anterior wall occurs because it is movable, with nothing against it. There may be more than we dream of on the posterior wall that probably close themselves. Dever said that in 48 cases of acute perforating ulcer he lost one—that is a wonderful record. The mortality depends upon how quickly diagnosis is made and how quickly you get into the abdomen.

Dr. E. C. Parker (Gulfport): Dr. Darrington has brought us a very timely paper. There are a few things I would like to add. I would like to suggest the possibility of pain referred to the clavicle being due to tension to which the diaphragm is put, the pain thereby being referred to the phrenic nerve. I have in mind one case, a man less than 20 years of age, who complained of knife like pain in the abdomen. It gradually got worse, and he fell while walking on the street and was taken to the hospital. There was no history whatever of indigestion or any disturbance of the stomach. He was found to have a typical abdomen, and a small perforation of the duodenum was found. Another case which I recently saw in consultation, on the fifth day, a man 65 years of age, a minister, who fell over as if he had been shot, while in the pulpit. He was taken home and treated, and when I saw him five days afterward he had peritonitis. I figured that he had a chance if left alone; this was an old chronic condition of several years standing, and I am glad to say that he is now up and about. The main thing is to get to them early. The board-like abdomen is absolutely tpyical; they will try to keep you from touching the abdomen. The best treatment, as Dr. Darrington said, is in the diagnosis and early operative procedure.

Dr. Otis Beck (Greenville): I want to say a few words about several points Dr. Darrington mentioned. I have the impression that he thinks it is pretty easy to diagnose a perforated gastric ulcer. It has always been a pretty difficult matter for me to differentiate the diagnosis in the upper abdomen from acute gallbladder, acute pancreatitis and other things that happen there. I want to stress one point; you have an acute abdomen which needs immediate attention. The time to go in and do your work is then and there. The old procedure was I believe in these cases to do a posterior gastro-enterostomy. I believe they have got away from that. The duodenal tube has done more to add to the comfort of post-operative cases than anything else in the last few years. Let me warn you, however, with the tube that stays in the stomach and induces drainage you may have an alkalosis, and that can kill your patient as quickly as an acidosis. It is just as important to give sodium chlorid and glucose to prevent alkalosis as any other post-operative procedure you may do.

Dr. R. D. Kirk (Tupelo): I have had 13 cases of perforated duodenal ulcer, and I think that is quite a record. One important thing about diagnosis of perforated duodenal ulcer is the shock that was mentioned. The patient is not in a true state of shock as regards circulation, although he is in extreme shock. He has a very low pulse rate. I agree with conservative treatment. I think the simplest thing we can do at the time of operation is best, and reserve a more complicated operation for a later date. One type of case I have seen has had pain over McBurney's point. That is explained by the fact that the ulcer perforates and fluid escapes down over the liver and down the pericolonic membrane, and I think we should bear that in mind.

Dr. Gilruth Darrington (closing): I want to express thanks for all the points brought out in this discussion. I think the general impression is that perforating ulcer is rare. However, it ranks second in acute abdominal conditions, so that you should not think such a diagnosis is far-fetched when you make it.

CARCINOMA OF THE STOMACH, WITH CASE REPORTS.*

A. STREET, M. D.,

VICKSBURG, MISS.

Carcinoma of the stomach comprises 33 per cent of all carcinoma deaths in England. Statistics indicate that fully one-third of the carcinoma deaths among men in the United States are from carcinoma located in the stomach. While it is possible that if we could make early diagnosis, cure could be affected in the majority of cases, the fact is that at present the diagnosis is usually made after the disease is so far advanced that permanent cure is achieved in less than 5 per cent of all cases, and in only about 15 per cent of those treated with radical resection.[2]

Not knowing the cause of cancer, whether located in the stomach or elsewhere, positive preventitive measures are impossible. However, it is well known that experimental cancers may be produced in animals by chronic irritation. It is possible that chronic irritation plus some unknown factor causes cancer in the human body. The two most probable predisposing causes of gastric carcinoma are chronic gastritis and chronic gastric ulcer. Both of these conditions are sources of chronic irritation.

The acid content of the stomach bearing an ulcer is usually high or at least normal. If the ulcer becomes cancerous the stomach acidity does not disappear. Hurst[1] concludes that cancer of the stomach does not cause achlorhydria, but that the absence of acid in cases of gastric cancer is the result of chronic gastritis which preceded the onset of cancer. Evidence has been offered to show that the cases of gastric cancer with histories of short duration of symptoms usually show absence of free hydrochloric acid, and that the majority of cases with long standing histories show presence of free acid.[1, 3] This suggests that the early complaint of cases with long standing history of gastric disorder was ulcer, and that the history of the low acid cases is brief because the symptoms of the antecedent chronic gastritis with achlorhydria were so mild as to be overlooked.

In view of these observations, measures for prevention of gastric cancer should consist of prevention, diagnosis and proper treatment of chronic gastritis and of gastric ulcer. Those who agree entirely with MacCarty as to the pathology of gastric ulcer and cancer will consider resection the method of choice in treating gastric ulcer. I think that is the most generally accepted idea of treatment of peptic ulcer located in the stomach. However, some prefer to observe gastric ulcer patients under medical treatment for a few weeks. If the symptoms improve, roentgen-ray evidence diminishes, and blood disappears from the stools, medical treatment is continued. On the other hand, if improvement is not promptly noted, the lesion is considered as a malignant one and resection is advised. (Lahey,[4] Rehfuss.[5]) From my own experience I can only recommend caution in judging a gastric ulcer benign. Marked symptomatic improvement following reconstructive measures in gastric cancer are not unusual.

That the diagnosis of early gastric cancer is not made more often is probably due to the fact that early symptoms are so mild as to be considered trivial by the patient so that he fails to present himself for examination. However, early gastric cancer cases do frequently lose much valuable time under medical care, the correct diagnosis being overlooked. This must unavoidably occur occasionally; but we should make every effort to overcome such a fault.

*Read before the Section on Surgery at the Sixty-third Annual Session of the Mississippi State Medical Association, Vicksburg, May 13, 1930.

The most constantly present early symptoms of gastric cancer are: Abdominal pain, loss of weight and strength, and widely varying digestive symptoms which the patients call indigestion. These digestive symptoms may conform to those of ulcer, gall bladder disease, gastric neurosis, or various colon disorders. They are not characteristic enough to be of much diagnostic aid. However, they may cause the patient to seek medical advice, and then the responsibility of prompt diagnosis is on the physician.

I have reviewed eleven consecutive unquestionable cases of gastric carcinoma, with special reference to history and the most important findings at time of examination. No doubtful case was included. The pathology observed in these cases did not indicate that they were early ones.

The summary is as follows:

Age: 40 to 72 years.	Average age 57 years. Per cent
Male patients	82
Female patients	18
Abdominal pain in history	91
Persistent digestive disorders of various types	91
Loss of weight and strength	91
Nausea and vomiting	82
Considerable anemia	27
Evidence of hemorrhage	82
Absence of free Cl	70
Presence of lactic acid	18
Palpable mass	10
Symptoms of obstruction	55
Symptoms for less than 1 year	73
Positive roentgen-ray diagnosis	91
Growth at pylorus	55
Growth proxymal to pylorus	45
Resected	6 cases
Gastro-enterostomy	1 case
Exploratory only	2 cases
No operation	2 cases

These observations seem to emphasize the importance of abdominal pain, persistent digestive disorder and loss of weight and strength in the histories of patients, especially of male patients above the age of 40 years. Of the objective findings roentgen-ray is the most important and reliable. Evidence of hemorrhage and absence of free hydrochloric acid are suggestive findings. However, free acid was present in 30 per cent of these cases and its presence does not preclude or make unlikely the diagnosis of gastric cancer. The presence of considerable anemia in only 27 per cent of the cases was surprising to me.

Duration of the history was less than one year in 73 per cent of the cases. Most of these cases had digestive symptoms occasionally before the time which I considered the beginning of their chief illness. The digestive symptoms of gastric carcinoma are persistent, with little or no symptomless intervals. They are also progressive. They are not relieved by the simple remedies which the patients had found efficient in treating their former digestive disorders.

Six of these cases were resected, four by the one stage Polya type of operation, and two by the Bilroth II method in two stages. The cases were carefully prepared before operation by daily gastric lavage, feeding only thin liquids, and when starved from obstruction were given intravenous glucose. If improvement was not satisfactory and the patient remained a poor risk, the two stage method was used. Otherwise, the resection was done in one stage. Cases in a starved and weakened condition were given blood transfusion following operation. All cases survived operation and were discharged from the hospital in satisfactory condition.

Except for one case, gain in weight and strength and freedom from digestive symptoms were present to a surprising degree following the operation. The exception was a case of extensive diffuse carcinoma with beginning leather-bottle type of stomach. Three cases are living at 26 months, 21 months, and 8 months after operation. Three cases have died at 28 months, 27 months, and 18 months after operation, one of hematuria, and two of liver metastasis. However, these cases remained in remarkably good condition to within about three months of death, and remained free of obstructive symptoms to the time of death.

All of the patients treated by resection had useful and comfortable months added to their lives. If diagnosis were possible early in the course of the disease, I am encouraged to believe that the majority of cases of gastric cancer could be cured by resection. The progress of the disease is rapid as is indicated by the usual history of short duration. Therefore, we will likely continue to see many cases in the advanced stage. On the other hand, those who are fortunate enough to seek medical advice early should have prompt diagnosis if possible. In order to accomplish this, all patients, and especially those above the age of forty who present themselves for medical advice regarding persistent digestive disorder, or loss of weight and strength, should have roentgen-ray examination of the gastro-intestinal tract along with thorough history, physical examination, and laboratory investigation.

REFERENCES.

1. Hurst, Arthur F.: Lancet, 2:1023-1028, 1929.

2. Fordyce, B. St. John: Ann. Surg., 86:283, 1927.

3. Dwyer, F. D., Blackford, J. M., and Turner, H. C.: Gastric cancer, Jour. Am. Med. Assn., 93:1456, 1929.

4. Jordan, Sara M.: Jour. Am. Med. Assn., 93:1642, 1929.

5. Rehfuss, Martin E.: The Diagnosis and Treatment of Diseases of the Stomach, W. B. Saunders & Co., 1927.

DISCUSSIONS.

Dr. Augustus Street (Vicksburg): In regard to the treatment, we have all been interested in the reports of the results following treatment by Coffey and Humber. At the Illinois Central meeting in Memphis Dr. Snyder reported that there was some amelioration of pain and diminution of the tumor following the treatment, but in an editorial in a recent number of the Journal of the American Medical Association disappointment was expressed. Thirty autopsies had been done and there was no evidence of any remarkable effect on the carcinomatous tissue, and it looks as if we cannot expect much from that treatment. It is reported that numerous fakes all over the country state they are prepared to offer this treatment. They are not sending any out from the clinic in California so it looks as if anyone claiming that they give the Coffey-Humber treatment are really frauds.

Dr. E. C. Parker (Gulfport): I think this is a most excellent paper, and it shows that the only treatment we have today for cancer is surgery. If we can get it early enough we can do something. The Coffey-Humber treatment, as he said, has been very disappointing. It looks as if it was thrust upon the public by a newspaper syndicate. They have only had twelve cases, and while they were experimenting a large newspaper syndicate got hold of it and spread the matter all over the country. They have been begging people not to come out there. They are rushed to death, and cannot take care of all the cases that have come to them. They have to guard their secret all the time. No one knows what it is except Dr. Humber and his wife. He has guards around his house. It is a pity so much publicity was given this before they are ready. They are not at all satisfied with what has been done as yet.

Dr. Gilruth Darrington (Yazoo City): Dr. Street has showed us that surgery is the only hope for carcinoma of the stomach and the surgeon has not a chance if these cases do not come in early enough. I think we are all guilty of treating palliatively too long. I do not think our conscience should let us carry our patient along over weeks and months before doing anything radical. He should have immediate and thorough investigation; if not, you have burned his bridges. As general practitioners we should investigate these cases of digestive disturbance and not treat them without knowing what is the matter.

Dr. H. A. Gamble (Greenville): Any treatment that is going to help the patient has to be done early. That is essential not only from the point of view of the physician but of the patient. It is not the physician's fault if the patient comes too late. He had pain in his stomach for a year. That pain was a danger signal. He knew there was something wrong and should have had it investigated. I was called in consultation to see a patient who had had severe pain for two weeks. She had a lump in the breast as big as my fist. It had been there a year if it was there a day. They try to kid themselves. The most important thing is the early recognition; early recognition means cure, and if not recognized early they will die.

Dr. W. W. Crawford (Hattiesburg): There is one thing I would like to emphasize. I would like to take into consideration first the etiology of cancer. I think the outstanding conviction today is that most of the cases are due to chronic irritation. Particularly is this true of the stomach. I think the Mayos a number of years ago made the statement that at least 65 per cent of the cases of cancer of the stomach were grafted on old ulcer lesions. If this be true, if you do get that amount, it is evident that we should deal with the precancerous condition in the form of ulcer of the stomach and undertake to cure it, which means that the responsibility goes back to long before the surgeon sees the case. Every case of indigestion should be correctly interpreted by the family

physician to find out whether it is due to ulcer, and, if so, appropriate treatment should be instituted. I think the physician has become pretty well convinced during the past decade that if any of the various types of ulcer found in the stomach are dealt with early enough in a medical way, we get a large percentage which can be arrested and definite repair made. So we need no longer think of a radical operation when we diagnose ulcer of the stomach. I think that point cannot be too strongly emphasized.

The next thing we have to do is be sure in studying lesions of the stomach that we really are dealing with a malignancy. A great many cases have lesions of the stomach, definite neoplasms in which one would be warranted in making a diagnosis of malignancy, and in which subsequent investigation has not borne out that diagnosis. In tremendous gastric hemorrhage, no free hydrochloric acid, both skiagraph and fluoroscope show a well established lesion that one could easily diagnose as malignancy. I think that most of us who have paid very much attention to diseases of the stomach know that cases come under our observation occasionally that are not malignant, and not necessarily luetic. When we dispose of both those groups we find some in which there is a spontaneous disappearance of the lesion of the stomach without any treatment that could be held responsible for the disappearance. In a recent issue of one of the medical journals there are some very definite pictures showing what I have suggested. I have seen it in my own experience, and I have no doubt that many others have also.

Dr. C. C. Hightower (Hattiesburg): I would like to mention something that we are likely to overlook. Many of these patients can be relieved, and even though hopeless can be given a year or more of comfortable life by a gastro-enterostomy under local anesthesia. It is not a very serious operation, and we ought to give them this added span of life.

Dr. Augustus Street (closing): The question of palliative gastro-enterostomy is one upon which there is some disagreement. From what I can learn from men seeing a great many cases, the results in gastro-enterostomy in stomach cancer are not usually so good as would be expected. In dealing with inoperable obstructing lesions, of course, we can only do gastro-enterostomy. I think the rather poor results following palliative gastro-enterostomy are due to absorption from the infected ulcerating mass left in the stomach. In one case I resected there was a nodule in the liver at the time of operation. That meant that the eventful outlook was hopeless. However, as I was able to get rid of the infected ulcerative cancerous mass, this patient gained about sixty pounds and had about two years of very comfortable life. I hardly think she would have had that without resection.

SOME OBSERVATIONS ON GASTRO-INTESTINAL DISEASES.*

J. H. MUSSER, M. D.,†

NEW ORLEANS.

The frequency with which a practitioner of medicine is consulted primarily for some disorder of the gastro-intestinal tract may be gauged from the figures compiled by Bass for the Committee on the Cost of Medical Care. These indicate that the average physician in general practice will visit or see in his office one patient in every twenty with a complaint referable to the alimentary tract. This undoubtedly represents a much greater incidence of disease in this one bodily system than any other if the ubiquitous coughs, colds, and upper respiratory tract infections of winter are excluded. It is in reality a goodly part of the doctor's practice of internal medicine, because a much greater portion of his work deals with minor surgery, obstetrics and venereal diseases than it does with internal disease. It would thus seem that this particular phase of medicine ranks higher in importance and in frequency than the figures of 5 per cent of visits would suggest. Heart disease, cancer and pulmonary tuberculosis in mortality statistics far exceed the number of deaths from causes found in the intestinal canal, but the morbidity figures show that the converse is true. The average doctor is called upon more frequently to treat some acute transient or chronic long-standing gastro-intestinal disorder than he is to prescribe for a patient with rheumatic or syphilitic heart disease, carcinoma of the breast or chronic ulcerative phthisis. As a matter of fact, judging from the character of my work as an internist in private practice and from the patients observed in the large general

*Read before the Section on Medicine at the Sixty-third Annual Session of the Mississippi State Medical Association, Vicksburg, May 14, 1930.

†From the Department of Medicine, Tulane University, New Orleans, Louisiana.

medical clinic of the Charity Hospital of New Orleans, I would say that about one out of every three patients who were up and about, able to come to an office or clinic, came because of some gastric or intestinal trouble, when they suffered from non-surgical, non-venereal complaints. When special clinics are conducted in general hospitals with out-patient departments, that the gastro-intestinal clinic usually is two to three times the size of the diabetic, the heart, or the thyroid clinic, furnishes additional evidence that intestinal tract disease makes up a goodly section of the practice of internal medicine.

The actual number of patients seen primarily because of symptoms referable to the section of the anatomy under discussion, furthermore does not prove that the physician does not have to prescribe at some time or another, with a frequency which is without dispute, for nearly every patient under his care, irrespective of the primary disease, because of indigestion or constipation or some other trouble in the gastro-intestinal canal. In other words, the diagnosis and treatment of this system bulks much larger than the figures of one case in twenty would indicate. They represent primary diagnosis, but as to secondary diagnoses they are most misleading.

This rather long preamble explains the reasons for presenting to this organization some random observations on several rather disjointed phases of gastro-intestinal disease, brought together only by the links of a common symptomatology and fused by a community of expression: belching of gas, heart-burn, diarrhea or constipation.

ETIOLOGIC DIAGNOSIS.

Having attempted to prove that gastro-intestinal disorders are quite an ordinary occurrence, I am now going to do an about-face and to endeavor to demonstrate that while gastro-intestinal symptoms are sufficient to bring to the doctor the patient under the impression that he has stomach trouble, actually in the great majority of cases the symptoms are merely the gastric expression of disease elsewhere in the body. If a large number of patients whose chief complaint is some kind of indigestion are carefully investigated it will be found that the final diagnosis will not be chronic gastritis or peptic ulcer or gastric neurosis, but will consist of the etiologic cause which is responsible for the stomach symptoms. More and more infrequently are the terms chronic gastritis, gastric atony, gastrectasis disappearing from medical terminology. Physicians are attempting to find the cause responsible for functional, and even organic disorders of the gastro-intestinal tract, and for the most part they are successful in their quest. Increasingly are they cognizant of the influence of some pathologic process within the abdomen, such as gall-stones or peritoneal adhesions, in the production of gastric and intestinal symptoms. The ultimate diagnosis of what appeared to be at first primarily an intestinal tract complaint is so frequently one or another of these intra-abdominal disorders that it would seem that the sections of medical text-books on gastro-intestinal disorders need to be entirely rewritten.

Sufficiently important to be stressed, is the fact that alimentary tract dysfunction is by no means always due to disease within the abdomen. The gall-bladder or appendix cannot be incriminated in every gastric case. Oftener the etiologic cause is far removed from the midbody. The vomiting of a brain tumor or abscess or from any causal factor responsible for a greatly increased intra-cranial tension, is a classic example. Less serious pathologic conditions in the head may produce symptoms less spectacular than the projectile vomiting of cerebral neoplasia, but the clearing up of an apical tooth abscess may be the means of curing disturbing and uncomfortable gastric complaints whose real etiology is not in the stomach.

Focal infection has been incriminated as the factor responsible for a host of conditions, but nevertheless this overworked pathogenic agent is frequently the underlying cause for gastric or intestinal disorders and should not be neglected in the handling of the patient who is suffering from spastic constipation or hyperacidity. These remarks are appropriate here because foci of infection are commoner in the head, teeth, tonsils and sinuses, than elsewhere in the human economy.

The consistency of gastric complaints in the subject with cardiac pathology hardly needs to be recounted. That passive congestion of the splanchnic circulation during the course of congestive heart failure will produce symptoms in the alimentary tract is obvious and well known; but that other types of heart disease will do so is not quite so clear nor so generally recognized. The frequent diagnosis of acute indigestion in cases of sudden death in middle-aged males would not be so frequently made were it appreciated that not one death in a hundred thousand adults could be ascribed to this cause and that often the most outstanding manifestation of acute coronary thrombosis or occlusion, the real cause of the sudden death, is epigastric pain and vomiting. Furthermore, the most direct evidence of coronary occlusion in him who has survived the initial insult is in many instances epigastric pain, discomfort and belching, and not precordial pain or dyspnea unless there has been considerable physical effort. Following occlusion of a small branch of one or the other coronary artery, the indigestion that follows sometimes causes more annoyance than any cardiac symptoms. Another fact that is at times overlooked is the influence of toxic doses of digitalis upon the appetite and the stomach. Anorexia followed by nausea is a very definite indication that the patient who is receiving digitalis has had just about enough of the drug for the time being. At a recent medical meeting that I attended, the speaker in discussing rheumatic fever and rheumatic carditis in children, stated that frequently gastric symptoms were an important manifestation of this at times most bizarre and difficult-to-diagnose disease.

The lungs and pleura, when diseased, are not as a rule quite so prone to present outstanding gastro-intestinal symptoms, but they do at times obscure the picture. The pain of a left-sided pleurisy may be referred to the epigastrium and be associated with certain gastric complaints so that the primary seat of trouble may be missed or overlooked for a time. As an indication of the difficulties in making a diagnosis and of differentiating between pulmonary and intestinal cancer, at this same meeting just mentioned, Funk in discussing the clinical features of sixty-eight proven-by-autopsy primary cancer of the bronchus and lung cases, mentioned that in four of them the primary seat of the new growth was believed to be in the gastro-intestinal tract. It must not be forgotten that cancer of this system and cancer of the lung may stimulate each other, the lung symptoms, of course, arising when secondary metastases have occurred, the gastric symptoms as part and parcel of the secondary manifestations that occur when disease is present elsewhere in the body.

Thyroid disease, diabetes, acute infections, in fact disease in general, may be masked by gastric symptoms at the onset. It pays to be wary indeed of making a diagnosis of gastric disease without surveying the patient carefully for other diseases, the alimentary manifestations being entirely reflex. So far the etiologic diagnosis has dealt entirely with pathologic conditions. All reference to functional disorders of the stomach dependent upon phychic stimuli has been omitted. They could furnish a chapter alone. Suffice it to say that their recognition is easy, their etiologic confirmation difficult. To prove that there is no organic process responsi-

ble for the dysfunction is important but hard.

ALIMENTARY TRACT SYMPTOMS.

It is plainly impossible in the ascribed limits of time to discuss each and every symptom of gastro-intestinal disease. A book might not cover all that could be written. For this reason two rather intriguing symptoms, aerophagia and spastic constipation, will be briefly discussed.

Aerophagia, usually referred to as the belching of gas, is extremely common as a symptom secondary to some intra-abdominal pathologic process, often as a pure neurosis. Of course there is no belching of gas, but there is belching of swallowed air. The gases of fermentation do not form in a stomach which has in it the powerful antiseptic, anti-fermentative hydrochloric acid. It may be possible to conceive of gas arising from the decomposition of food in a stomach in which bacteria might grow and multiply, when there is pyloric obstruction from carcinoma for instance, but such a lesion is rare and it is still rarer for these sufferers to be bothered to any extent with the gas of fermentation. In a stomach which empties with reasonable promptitude, even lacking acid, the time element is too short to allow of fermentative gases being formed. It is swallowed atmospheric air which is eructated and sketchily its entrance in the stomach and subsequent expulsion takes place in somewhat the following manner: Normally the stomach contains a certain quantity of air, visible roentgenology as an "air bubble," at the cardiac end of the stomach. This air, in small amounts, enters the organ with each mouthful of ingested food and is expelled when in any great amount by a relaxation of the cardiac sphincter. This occasions a sensation of relief if the patient has had a large meal and the stomach is disagreeably distended. A person suffering from dyspepsia finds that the eructation of air makes him temporarily more comfortable and he attempts to bring up air when again the stomach feels full. In order to do this he must force air down the esophagus to relax the sphincter of the cardia. This air comes rolling back in a few seconds or minutes and a very momentary relief is afforded. The whole process is, in the neurotic, repeated *ad infinitum* and a full-fledged "gas attack" is soon under way. That this is the mechanism of production of such attacks may be proven by watching such patients closely and observing them swallowing atmospheric air or by such a simple procedure as having them hold a cork between the teeth, preventing the forcing of air by swallowing into the stomach, and stopping the attack. This phenomenon is purely a neurosis, but the belching of gas (air) in small quantities is a measure which is often present when there is gastric atony or organic disease of the stomach. The comfort afforded by the expulsion of the greater part of an air bubble in these cases is well known. Help may be given the patient by a simple carminative compound consisting of equal parts of aromatic spirits of ammonia, spirits of chloroform and compound tincture of cardamon, a teaspoonful in a quarter of a glass of water.

Spastic constipation is a symptom at times secondary to one of many chronic intra-abdominal disorders, but probably more frequently existing as a functional disorder dependent upon no demonstrable cause. At one time the atonic type of constipation was held to be by far the most common of these two main types of constipation, but since the very general employment of the roentgen-ray in the diagnosis of gastro-intestinal disorders, spastic constipation has been shown to be present with a surprising frequency. The

symptoms of the condition vary from more or less persistent vague intestinal pain associated with constipation to occasional severe colicy attacks which are extremely painful and relieved only by a hypodermic of morphine and large doses of atropine. These patients are always unnecessarily disturbed by the concomitant constipation. The symptoms that arise are those common to any constipated state and are attributed to the absorption of toxic material from the colon. That this is a dubious proposition may be suggested by the following facts: constipated feces are dry and the bacterial count is lower than in the normal soft stool; immediate relief is afforded by a satisfactory evacuation, a relief which is so prompt that there could be, by no possibility, such a quick removal of toxic material from the body; the symptoms may be mimiced very closely by packing the rectum with cotton or gauze; some people may go for days without a bowel movement. It is hard to conceive of the absorptive powers of the colonic mucus membrane of apparently normal people varying to such a degree as this would indicate. Irrespective of the truth of these contentions, and, parenthetically, it might be observed that there has never been any toxic substance proven to be the cause of the symptoms, the patient with colonic spasm wishes relief. This may be brought about by the removal of irritative psychic or mental or pathological stimuli, the administration of belladonna in full therapeutic doses, absolutely no irritative cathartics, merely mineral oil, and by all means a bland diet, a diet which is the antithesis of that given in atonic constipation where bulk is the primary requirement.

GASTRIC PHYSIOLOGY.

A last word concerning one of the recent additions to our knowledge of the function of the gastric secretions which has been developed as a result of the Minot studies of the effect of liver feeding in pernicious anemia. In this disease achylia is invariably present. Why does this gastric dysfunction appear as a part and parcel of the pernicious anemia syndrome? What relation does it have to the disease? The answer to these questions has been made possible largely by the studies of Castle. There is present in the gastric secretions some substance which so activates certain foods that they give rise to an unknown factor which is necessary to bring about maturation of the erythrocytes, permitting them to escape from the bone marrow. This ripening element is found in liver, kidney, stomach and probably in animal flesh in considerable quantities. It or a comparable but not necessarily a similar substance may be extracted from liver in a concentration so great that 0.1 gm. of the extract is equivalent to 300 grams of whole liver. The achylic stomach of the pernicious anemia patient cannot prepare this substance as can the normal, from relatively small amounts of certain proteins, but when these proteins are given in excessively large amounts or very highly concentrated, they can replace the absent hypothetical material.

SUMMARY.

Gastro-intestinal disorders are extremely common. They are frequently reflex manifestations of disease elsewhere. A thorough search for the etiologic factor is indicated in every patient with alimentary tract complaints. Aerophagia is often an autoinduced phenomenon. Spastic constipation, a common disorder, should not be treated with stimulating cathartics nor an irritative diet. Achylia gastrica plays a very definite part in the development of a disease seemingly non-related to the stomach.

EPIDEMIC VOMITING OR INTESTINAL INFLUENZA.*

R. T. LUCAS, M. D.,

SHREVEPORT, LA.

The term "epidemic vomiting" is here applied to the vomiting occurring in young children in the winter season usually in epidemics. For convenience these cases are commonly classified as intestinal influenza.

PATHOLOGY.

During the winter season when respiratory infections become more prevalent epidemic vomiting begins, and often becomes very prevalent in the course of a week or two, lasting a variable length of time and often disappearing as rapidly as it appears. Occurring as it does when respiratory diseases are most prevalent, the disease is easily classed as an intestinal form of influenza. However, the time element may be mere coincidence.

The vomiting of mucus and occasionally bile would indicate some degree of gastritis. The usual absence of dietary indiscretion adds weight to the infectious character of the disease. Sometimes there is some degree of diarrhea, but usually the bowel movements are normal, which would seem to indicate that pathology is usually limited to the stomach. If there is much fever or the vomiting continues into the second or third day there is usually acetone. Apparently the incubation period is only a day or two at most. My own two children had bad spells of vomiting, the onset being twelve hours apart.

SYMTOMATOLOGY.

Vomiting is usually the first symptom, but in some cases the patient has had a cold with or without fever for a few days. The patient may vomit only once or twice, but usually vomits for two or three days. Rarely he may vomit occasionally for several days longer than that. He may vomit only food or as is usually the case even water. Vomiting occurs in the acute stage whether water and food are given or not. The vomitus at first contains food with some mucus and rarely bile. Later it consists of water and thick mucus. Nausea as such is usually absent or only slight, but the patient may appear depressed and drowsy. Coincident with the cessation of vomiting the drowsiness disappears, and the patient feels all right. There is a complete lack of desire for food at first, but the desire usually returns a little before tolerance develops, but may be delayed until this time. The appetite is usually impaired for a number of days after vomiting ceases.

DIAGNOSIS.

The diagnosis is usually easy. The sudden onset of vomiting without apparent cause in a well or practically well child, the prevalence of similar cases, and the time of year make the diagnosis of epidemic vomiting most reasonable. Of the conditions which must be ruled out one should bear in mind dietary indiscretions, appendicitis, intussusception, meningitis, and cerebral hemorrhage. Appendicitis is ruled out by the absence of localized pain or the usual absence of any abdominal pain on palpation. Intussusception is eliminated by the absence of appreciable pain, absence of straining, and by the passage of fecal stools. Meningitis is ruled out by the absence of symptoms other than vomiting. The absence of head injury is sufficient to rule out cerebral hemorrhage. Dietary indiscretion is ruled out by the history and course of the disease.

TREATMENT.

In those patients who cannot retain water at the beginning of vomiting, and this group comprises most of them, all that can be done is to keep everything out of the stomach and as soon as possible begin giving a little crushed ice. If water is not retained even in teaspoonful amounts small amounts of it may be supplied by rectum in some cases. Where the vomiting is very persistent, especially when fever is present, appreciable dehydration usually develops.

*Read before the Louisiana State Pediatric Society, Shreveport, La., April 28, 1930.

It is my custom to give water in teaspoonful amounts every ten to twenty minutes as soon as it is retained, followed in a few hours by sweetened, strained orange juice in teaspoonful amounts given the same way. The water and orange juice may be increased slowly as tolerane is demonstrated. If the patient has been without food over forty-eight hours I usually order a mixture of equal parts of twenty-five per cent dextrose and strained orange juice given as above. In those patients with diarrhea or those below one year of age I usually omit the orange juice and give twelve and one-half per cent dextrose solution. This treatment may cause some distention, and enemas may be necessary to relieve the condition. After the patient has not vomited from twelve to twenty-four hours, Eagle Brand Condensed milk one to sixteen is tentatively tried, giving not over two ounces at first and as much less than this as will reasonably satisfy the patient. Eagle Brand Condensed milk and strained orange juice are continued for twenty-four hours before anything else is added to the diet. After this the patient can usually take a fairly normal diet, provided the stomach is not overloaded. It is not uncommon for the patient to vomit occasionally for two or three days after the acute stage. It is usual for the patient to have little appetite for four to seven days after vomiting ceases.

I have never seen an unmistakable case belonging to this classification that did not get well. There are not infrequent cases with somewhat the same clinical picture that become progressively worse, and a condition of acidosis develops, apparently on account of inability to retain anything. These patients require more vigorous treatment, such as saline intraperitoneally, blood transfusions, and dextrose intravenously or intramuscularly.

EPIDEMIC CEREBRO-SPINAL MENINGITIS.*

F. M. ACREE, M. D.,

GREENVILLE, MISS.

Meningitis, or inflammation of the meninges, may be caused by a great variety of organisms, as the pneumococcus, influenza bacillus, bacillus of Friedlander, micrococcus catarrhalis, bacilli of the colon group, including typhoid, rarely the malaria plasmodium and the spirochetae, the pyogenic organisms (streptococcus, staphylococcus), and the meningococcus. It is of the clinical entity of which the last named organism is the etiology, namely, epidemic cerebrospinal meningitis, that this paper deals. Epidemic cerebrospinal meningitis may then be defined as an acute infectious disease attended by a seropurulent inflammation of the membranes of the brain and spinal cord, and due to infection with the meningococcus.

The disease was first reported in Switzerland in 1805 by Vinenssen. A year later the first case was reported in America.

A. Levinsohn, professor of pediatrics, at the Northwestern University Medical School, writing in the Journal of the Michigan Medical Society,(1) says: "In the present state of our knowledge we are aware of but one type of meningitis that presents a hopeful prognosis, namely, the meningococcus type. Statistics from all over the world indicate that the mortality from meningococcus meningitis has been reduced from 75 to 25 per cent since the introduction of the specific serum." With such statistics it is hard to understand why some seem to take the attitude that if meningitis is left untreated, as many patients will recover as if active serum treatment is instituted. It is my belief that even if we do get recoveries in untreated cases the chances of complications are greater, and the complications are of a more distressing nature. Hence, with statistics showing that the mortality is

*Read before the Section on Medicine at the Sixty-third Annual Session of the Mississippi State Medical Association, May 15, 1930.

reduced from 75 to 25 per cent, we must realize that every case deserves serum treatment. The earlier the diagnosis of meningitis is made, the greater the chance the patient has of recovery.

Stookey, Elliott, and Teachnor, in the Journal of the Iowa State Medical Society[2] make the statement that, "Epidemic cerebrospinal meningitis is a septicemia, the infection passing over from the blood stream into the central nervous system. The septicemic stage may last from eight hours to several days." If one can make a diagnosis during this septicemic period a better prognosis is offered than if diagnosis is delayed until after the invasion of the central nervous system. They[2] also say that, "In 90 per cent of the cases, the leukocytosis is above twenty thousand." All authorities agree that clinically, headache, fever, and a very high leukocytosis are the most important and constant of the prodromes of this disease. When these objective findings have led to the suspicion of meningitis, the following must be ruled out: 1. Meningism. 2. Poliomyelitis 3. Encephalitis. In reaching a decision it is helpful to consider such facts as the season of the year, for meningism may occur at any season of the year, it being secondary to some demonstrable cause elsewhere, as otitis media, or sinusitis; poliomyelitis usually occurs in early summer or late fall; and encephalitis usually occurs during the winter and after epidemics of la grippe. Presence of epidemic: Meningism is not epidemic nor is encephalitis, but both poliomyelitis and meningtis are epidemic. The immediate preceding illness: Meningism is always secondary, as is encephalitis, but poliomyelitis and meningitis are primary. The clinical symptoms, as severity, order of appearance, etc.: These symptoms vary with the various stages of the disease from a slight headache, moderate fever, and general malaise, at the onset of the disease, to convulsions, somnolence, stupor, projectile vomiting, stiffness and retraction of the neck, rigidity of the back and extremities, in the more advanced stages of the disease. The knee jerk is increased and Kernig's and Burdzinski's signs are positive in meningitis. A blood culture should be made and a spinal puncture should be done, for a study of the spinal fluid findings yields much valuable information toward the making of a diagnosis. If the meninges have been invaded the fluid will be under an increased pressure, the normally clear fluid may show any degree of cloudiness to turbidity, the cell count is increased from the normal number—one to ten—up to fifty thousand, with a change in type from the lymphocyte of the normal fluid, to the polymorphonuclear leukocyte. Often the meningococci may be found within the leukocytes, a gram negative diplococcus. This, of course, at once establishes the diagnosis.

Treatment consists of the administration of the anti-meningococci serum into the spinal canal and into the blood stream. Mild cases should have daily injections into the spinal canal and blood stream for two or three days, followed by an interval of forty-eight hours, or less, if symptoms demand, and injections repeated. Severe cases should receive injections into the spinal canal and into the blood stream every twelve to eight hours for thirty-six hours. During the recent epidemic in Greenville, several cases were encountered, especially in children, in which the spinal fluid was too thick to flow from the spinal puncture needle. In several of these cases, Dr. R. E. Wilson[3] devised a spinal irrigation in the following manner: The spinal puncture needle was left in situ; a cistern puncture was done with a second needle and the canal irrigated with warm normal saline through these needles until the canal was sufficiently clear of pus to admit serum. Frequent studies of the spinal fluid should be made and treatment should be continued until after the spinal fluid cell count falls to one thousand or less, with 50 per cent polymorphonuclears and 50 per cent lymphocytes. E. S. Whitehead, writing in the U. S. Naval Bulletin[4] details the treatment of five cases in which the average amount of serum given intraspinally was 143 c.c.—the lowest

amount being 120 c.c., the highest amount being 190 c.c. The writer recently had a case in which 270 c.c. were given intraspinally before the cell count came down to 1000. The case was, however, one of marked severity in every respect. Dr. T. B. Lewis of Greenville[5] reports a series of eight cases all of which recovered and in which no case received more than 75 c.c. either intraspinally or intravenously. Dr. John Archer of Greenville, in a personal communication, reports two cases that required large amounts of serum for recovery. One of the two cases received 390 c.c. and the other cases received 330 c.c. The five cases detailed by Dr. Whitehead all made an uneventful recovery, as did the one case of the writer just quoted, and the two cases of Dr. Archer's mentioned above, showing that serum should be administered over long periods of time and in large quantities, if necessary. For shock give adrenalin or artopine in large doses; for convulsions or twitchings give bromide or chloral hydrate; for cardiac and respiratory stimulants give caffein and aromatic spirits of ammonia. Relieving the pressure by withdrawal of spinal fluid will generally relieve the headache. The patient should be isolated and under strict quarantine, have complete rest, and be given, as soon as possible, a high calorie diet. During coma, gavage and rectal feedings should be given.

The complications and sequalae of cerebrospinal fever may be many or few, according to the severity, and the management of the case. There may be arthritis, cystitis, endocarditis, hydrocephalus (in infants) conjunctivitis, epididymitis, otitis media, and a host of others, but LeFetra[6] says that "Complications rarely occur in those cases that recover."

As regards prophylaxis, there seems to be no definite one or two things that may be done to prevent the contracting of this dread disease. One definite cause of increased susceptibility may be removed by the avoidance of any undue exposure to cold and fatigue. It would seem that those who are constantly exposed and working with and around the disease develop an immunity, for, as far as I have been able to find out, there have been very few cases to develop among those who are in constant contact with the disease. In the more than one hundred cases occurring in the recent epidemic at Greenville, less than ten cases have occurred as a second case within the family. There is no proof that vaccination with a suspension of killed meningoccici has any protective value against natural infection of man. In a series of 338 cultures, taken from the naso-pharynx of a force of men, among which two cases of meningitis had developed, 18 positive cultures were obtained, a percentage of 5.3 per cent. These men working under ideal conditions for the development and spread of the disease. Often they were wading in water to their knees, often worked in rain, and on two occasions snow, with the thermometer showing a daily range of ten to forty degrees above zero, and exposed at all times to a cold wind. The eighteen men, showing positive cultures, were removed from the force, placed under strict quarantine and the naso-pharynx treated daily until two negative cultures were obtained. The cases treated longest, in this manner, were for sixteen days and two positive cultures were obtained on two cases before a negative was finally gotten. No further cases of meningitis developed among the force of men at work, nor did any of those with positive cultures develop the disease.

CONCLUSIONS.

1. The mortality from meningococcic meningitis has been reduced from 75 to 25 per cent since the introduction of a specific serum.

2. Every case, suspected of being meningitis, should have a spinal puncture and studies of the spinal fluid made.

3. The earlier the serum treatment is instituted the better the prognosis.

4. Those working with and in constant contact with meningitis apparently develop an immunity.

5. It is thought that the segregation of carriers, determined by culture of the nasopharynx was effective in the control of a threatened epidemic among a force of men at work under conditions that were ideal for the spread of an epidemic.

BIBLIOGRAPHY.

(1) Levinsohn, A.: Jour. Mich. Med. Soc. 28:572-3, 1929.

(2) Stookey, Elliott & Teachnor: Jour. Iowa State Med. Soc. 477-83, 1929.

(3) Personal Communication.

(4) Whitehead, E. S.: U. S. Naval Med. Bull. 27: 257-9, 1929.

(5) Personal Communication.

(6) LeFetra, L. E.: Atlantic Med. Jour. 31:732-40, 1928.

DISCUSSION.

Dr. L. S. Lippincott (Vicksburg) I want to congratulate Dr. Acree on this excellent paper—he has not left much to discuss. I would like to say that I wish we could get away from this term, "epidemic." Of course, we do have epidemics; this year there are probably more cases than ordinarily, but in the usual run of things we see meningitis only sporadically, and to have the newspapers refer to this disease as epidemic meningitis gets everybody stirred up. Meningococcic meningitis instead of epidemic meningitis would seem more appropriate. Dr. Acree said that meningococcic meningitis was practically the only type that offered any hope in treatment, and I think this is true; but it is encouraging that now and then we find reports where patients with pneumococcic meningitis recovered. We always used to feel that patients with pneumococcic or streptococcic meningitis would die anyway, but treatment with the Huntoous antibody solution and optochin hydrochloride has cured a few cases, and we may see better results later on. Of course as Dr. Acree says, early diagnosis and early treatment is the essential thing. The leukocyte count is usually high, but early it is not high enough to make the diagnosis, and we should not wait for that. If there are high temperature and chills without anything else to account for it, I feel that a spinal puncture should be made. That will tell the story, and I feel that we should have our meningococcic serum ready. Give it as soon as a turbid fluid is found. It may not be meningitis, but the patient will not be harmed, and if it is meningitis there is the advantage of the time factor. I feel that it should be given intravenously in large amounts at the same time as given intraspinally. At times when a case requires a good deal of serum there will be some allergic reaction, but that is not an indication for ceasing treatment. The meningitis is much more important than the allergic reaction. It is possible to find the carriers when they exist and to find the organisms in contacts, but there is too much tendency to isolate people who have been exposed without identification of organisms found. People get excited. Cultures should be checked. We have serum reactions that tell us when meningococci are present. I have had several people who had been told that they were carriers in whom I found no meningococci in the nasopharynx, and one technician told me that she often found carriers but did not use serum for identification. Let us check these people before we isolate them and tell them they are carriers. It is not easy to clear up the carriers. Everything in the pharmacopeia has been used to spray the noses of these people, but it is very likely that sunlight and fresh air will do as much as any antiseptic.

Dr. H. C. Ricks (Jackson) This disease, meningococcic meningitis, has been of much interest to public health workers and the men who have been located in the delta area of Mississippi during the past winter. As to early diagnosis, I want to stand behind Dr. Acree and Dr. Lippincott in that. I want to go further, and say that in an outbreak similar to that which occurred in Dr. Acree's county I would not wait for the high blood count or the presence of meningococci in the spinal fluid to administer serum. Make a puncture of the spine and administer serum. The serum should be heated to about 100° F., to avoid shock, and less serum should be administered than the quantity of fluid that has been removed. In administering the serum use the sphygmomanonometer, and at a drop of 20 points stop the administration. As to meningococcic meningitis being a primary condition, that is open to question. Dr. Acree says it is a septicemic condition. The organism gets into the spinal canal through the blood stream, not through the nose as has heretofore been thought. It has been proven by British workers that only 5 per cent will have meningitis if exposed to it. Meningitis patients should be put into a hospital. It is unfortunate that we have some professional alarmists who consider they should be kept at home or in the pest house. They should be given the opportunity for the best possible treatment. In the outbreak in Washington County, 117 were admitted to the hospital, and 78 per cent recovered from the disease. That is due to the fact that the physicians were on the job, and the health officers were on the job and gave the serum. There were only two cases in one family in Washington

County. In the instance reported in Dr. Acree's paper I would say that the isolation of these fifteen men kept down the epidemic. Those fifteen men were the only ones susceptible to the disease, and in this group, if we investigated these patients we would have found that they were laborers who were not accustomed to the conditions under which they had been working. We know that during the outbreak at Great Lakes, where they came from places where there were carriers, they were all right; but they started to have meningitis when they were put to work that was very strenuous and exposed to extreme conditions of weather.

Dr. N. C. Womack (Jackson) When there is an epidemic we judge many cases to be meningitis that show no symptoms; spinal puncture usually clears up the diagnosis. But as a general rule the cases we see are more or less sporadic, which makes the necessity for early diagnosis all the more important. The specific point I wish to mention is that radical treatment —intraspinous injection of serum, intravenous injection of serum, and intramuscular injection of serum should be given early. In every severe case we use the first day large quantities of serum. There are some forms of serum on the market that do not seem to click. There are particular epidemics in which a certain serum does not click. There are thirteen different types and the serum is made from these types, and I would like to ask the essayist if he found a serum that did not click. Another point is that the course of the disease will depend upon the sugar curve of the spinal fluid. You will know from that whether your patient will get well. Dr. Watkins read a report before the Alabama State Society of a series of cases that was very instructive.

Dr. F. M. Smith (Vicksburg) There is no communicable disease that keeps health officers on the job more than meningococcic meningitis. It comes from one part of the city or one part of the county, and we can trace the contacts only with the greatest difficulty. These germs do not pass through brick walls, and do not stay in the air; they die immediately upon leaving their host. They leave the host by catarrhal conditions, but seasonal conditions we feel have no bearing. It is the universal handkerchief—from the elbow to the fingers—as used by the colored people. I might say that we believe immunity is acquired by building up the general condition, and, therefore, it is possible that in the future we will recognize meningitis only by the conditions in the naso-pharynx, and by building up immunity. We had during the past winter seventeen cases in Vicksburg, with seven deaths. Eight had been treated by negro physicians, who did not know how to get into the spinal column; out of the eight cases only two died. We took the spinal fluid in one case after the man was dead. This unnecessary alarm should be quelled. Use simple personal hygiene; keep their hands out of the mouth; keep the fingers sterile. We feel that it should never be termed epidemic meningitis; there is no morbid pathology that invades the atmosphere; it is just contact that is close enough to transfer the meningococci.

Dr. J. G. Archer (Greenville) In a series of ninety-six cases treated by Dr. R. E. Wilson and myself there were twenty-six deaths. Of the seventy recoveries we have been unable to follow all the cases. We know that three are stone deaf; one complains of a creeping sensation up and down his back and around his waist; one has headaches and one endocarditis. Even though the diagnosis is not always easy, treatment should be begun as soon as possible. We had one case, a negro seen twelve hours after onset, in coma, with temperature of 106°; another case, a nurse seen eight hours after onset, complaining of headache, nausea and vomiting. In the first case the negro was absolutely relaxed, no Babinski was present; the spinal fluid was slightly under pressure, cell count was 10. Twelve hours later the fluid was under pressure, cloudy, and the meningococci was found. Twelve hours later the patient was dead. In the second case the temperature was normal, there was no Kernig, the blood count was high. We decided to do a spinal puncture. The fluid was under pressure, the cell count 150, no meningococci were found, but treatment was started immediately. Three days later the fluid was very cloudy, the cell count markedly increased, and meningococci were found. This young woman had a very stormy time, and during her illness developed malaria. I mention these cases because so many are rather atypical, and in any case where we suspect meningitis, the spinal puncture should be made, not only once, but again twelve hours later to determine the condition of the fluid. I believe the sooner the serum is given, the better the chance for recovery. This nurse was given serum and very intensive treatment, but at the end of several days seemed to be getting worse. The serum was then changed and it was found that even after the first dose she started getting better and afterward made a complete recovery. They are all polyvalent, but I believe they are of different strains to a certain extent, and by changing the serum we often find improvement. Of course the ideal way would be to type the serum with the patient's blood and the serum with the greatest agglutination power should be the one used.

Dr. L. W. Long (Jackson) One point is early treatment, and a second important point is persistent treatment. Give injections intravenously and intraspinally at once, and repeat it after eight or twelve hours. If you repeat it that often, and at the end of thirty-six hours do not get improvement, switch to another serum. We have a method of testing, the Queckenstedt's test. The fluid will flow out more rapidly. If it does not you have an obstruction at the opening of the fourth ventricle. They are not much trouble and I have not seen any bad effects. In addition to that I do not hesitate to go into the ventricles themselves if the fontanelle is open, provided you leave a little track of serum, go into the ventricle until you get fluid, and replace it with serum. As the needle comes out bring out the serum and that will take care of the brain tissue. Do not worry about the brain tissue. I have never seen any bad effects following aspiration of serum into the front lobe, provided you leave a little track and withdraw it carefully.

Dr. F. M. Acree (closing) Dr. Lippincott's suggestion I think is a good one, that epidemic meningitis as a designation be dropped, and simply call the condition meningococcic meningitis, because I do not believe anything will strike more terror into the heart of a mother than the thought of it. It is all right to be concerned, but many mothers pass sleepless nights over the fact that their child may contract this disease. In the treatment of one of these cases I was unable to get fluid to flow into the spinal canal after withdrawal of the spinal ffuid. I thought the patient should have serum, so immediately inserted serum into the vein and in that manner the spinal fluid which is elaborated from the blood secured a large dose of serum. Dr. Ricks mentioned that these men were put to shoveling snow and then got meningitis. These men I spoke of were building a dyke on the Mississippi, the river was rising and the temperature was falling; many times they were in icy water above the knees; the conditions were ideal for development of meningitis. As to culture and treatment that is a moot question. The changing of serum is a good poin because one may not work. Lilly puts out a super-concentrated serum which is useful in treating children because the bulk is not large and it can be put into the spinal column of a child that will not take the full dose of an adult.

A STUDY OF THE INCIDENCE OF RICKETS IN A GROUP OF INFANTS IN NEW ORLEANS AND AN EFFORT TO PREVENT THE DISEASE IN A CERTAIN NUMBER OF THAT GROUP.*

RENA CRAWFORD, M. D., AND G. RICHARDA WILLIAMSON, M. D.,
NEW ORLEANS.

This study was made possible by the generosity of the Junior League of New Orleans. Members of this league had worked with us for three or four years in the clinics of the Child Welfare Association, weighing the babies, helping to keep their records, and encouraging the mothers to carry out the instructions given by the doctors and the nurses of this association. It had been pointed out to these workers how some of the children developed rickets even though the mothers were apparently carrying out the instructions given to them. We proposed making a special study to see if we could prevent the disease entirely in a group of infants by regulating the diets of the pregnant women who came to our clinics and by giving cod liver oil to the infants at a very early age. The league very readily gave financial aid to make this effort possible, and some of the members gave unsparingly of their time and services during the whole time the clinic was running. They were present each week, regardless of the weather, and measured and weighed the babies. They instructed the mothers how to give sun baths to their babies, and taught them how to give the cod liver oil. They became acquainted with each mother and baby and by their personal interest in each individual one succeeded in getting whatever cooperation we had from the mothers. The Southern Baptist Hospital gave the facilities for running the clinic. And Dr. L. W. Magruder, the roent-

*Read before the Orleans Parish Medical Society, May 12, 1930.

genologist of the hospital, made the roentgen-ray plates and helped in the reading of them.

The disease of rickets has interested the medical world for a long time, and many theories of its etiology have been put forth, and many cures for it have been given. We have had given as the cause of the disease all sorts of things, and conditions, ranging from cold impure air, uncleanliness, hereditary venereal taint, deficient food, microbes, internal secretions, on down to the modern theories. We have had given just as many methods of treatment of the disease. Dr. T. Swan Harding has written a "Brief History of the Therapy of Rickets" in which he says a comprehensive history of rachitic therapy should be written as it would be a touching and at times pathetic commentary upon the boundlessness of human, not to say medical, credulity. It seems only fair to say, however, that cod liver oil has been used at intervals by physicians who saw good results from their treatment without being able to say why such results were obtained, since 1807, when Bardly speaks of using cod liver oil on women patients worn out by "rheumatism" after pregnancy. These attacks were almost certainly due to a calcium depletion in the bones which we call today "osteomalacia." The exact relationship between rickets and osteomalacia has not yet been worked out. Cod liver oil has come into vogue and gone out of style more than once since it was first used as a therapeutic agent in the treatment of rickets. Dr. John Howland said at a meeting where the use of irradiated ergosterol was being discussed, that he had watched cod liver oil go out of use and then come back again, and that we should be very unwise if we should ever allow it to pass out of general use again.

In 1919 Mellanby produced rickets in puppies by restricting their diets and then cured the disease by adding the different oils and fats. Findlay and Patton attempted to produce the disease in puppies and kept some in the country and some in the city. Those in the city developed rickets and those in the country did not, though they were fed the same diet. They believed that environment and exercise played the important part in producing the disease. From that time to the present much work has been done on the subject and it all has brought forth and stressed the theory that rickets is due to faulty diet and lack of sunshine.

Dr. Ludo von Mysenbug in his article which appeared in the Southern Medical Journal, July, 1926, made a very excellent summary of the work that has been done since the work of Mellanby and Findlay and Patton up to 1926. All the experiments and investigations have shown that there is a reduction in the organic phosphate of the blood serum, and that an insufficient amount of lime salts is deposited in the bones. They have also shown that cod liver oil administered by the mouth, and exposure of the bare skin to sunlight or ultraviolet light from artificial sources, will bring the inorganic phosphate up to normal and will cause a deposition of lime salts in the bones. Since 1926 the chief work that has been done, has been along the line of irradiation and the feeding of irradiated foods as a cure and as a preventive of the disease. The work of Dr. Alfred Hess on the use of irradiated ergosterol as a preventive and as a cure of rickets is the outstanding work of the time. Dr. Robert Strong in The New Orleans Medical and Surgical Journal of November, 1929, has given a review of all the recent work that has been done on the subject.

Since sunshine is an essential preventive of the disease, we should expect to have less rickets in the sunny climate of New Orleans than they have in places with less sunshine. Drs. L. R. DeBuys and Ludo von Mysenbug, published a paper in The A. Jour. of Dis. of Ch., Sept., 1924, on the "Effect of the Routine Administration of Cod Liver Oil on the Development of Rickets in the Breast Fed," in which they gave the percentages of babies showing the clinical

symptoms attributed to rickets in a group of 191 infants in their first year of life. Of the babies studied, the plus readings ranged from 1½ pluses to 12 pluses. Of these babies, 96.8 per cent showed cranial bosses, 95.8 per cent showed costal beading, 85.8 per cent showed epiphyseal enlargement, 81.6 per cent showed flaring ribs, 62.2 per cent showed craniotabes. These percentages seem very high considering the fact that we see but few marked deformities from rickets among the children of New Orleans. Dr. Charles Williams published a paper in The A. Jour. of Dis. of Ch., April, 1928, on "The Infrequency of Severe Rickets in New Orleans and Vicinity," in which he says that he found a mild form of the disease in 45 per cent of the children under three years.

This study of our was begun in October, 1926. At that time we were examining all the babies delivered by the Child Welfare Association of New Orleans within 24 hours after their birth. That organization was delivering then between 45 and 55 babies per month. The organization sees the prospective mothers in the antenatal clinics every two weeks from the time they are registered until one month before the expected delivery, and then it sees them every week until the babies are born. A trained nurse goes into the homes of these patients once a month to see if they are carrying out the orders of the physician, and to give them any help they may need in making ready for the coming baby.

We saw these infants in their homes, as stated above, and then we saw them once a month or oftener in the child welfare clinics till they were one year old, and many of them we saw till they entered school. These infants were put on cod liver oil when first seen in clinics, but many of them developed rickets before they were one year old. We then decided to regulate the diets of the pregnant women, with the help of the obstetricians who were seeing them in the clinics, and the trained nurses who were visiting them in their homes, to see if we could prevent rickets entirely.

We planned to have these women eat one citrus fruit a day, at least one leafy vegetable, and one egg and to drink three glasses of milk, in addition to whatever other diet they might choose for themselves. We knew that there were many women in the clinic who could not afford this food every day. We gave to each of them when she came to the clinic every two weeks, a printed slip containing a list of the articles we wished her to eat daily. Opposite each article there were spaces left so that they could mark off each day which articles they had eaten and which they had not. We hoped then to follow up the babies of these women and see if the children of those who had eaten our diet, rich in vitamines, were free from rickets. The nurses explained to the women the importance of the diet both for themselves and their offsprings, and showed them how to keep their diet sheets each day. These diet sheets were collected from the women every two weeks at the ante-natal clinics and sent to us. When the babies were born and came to our clinic at the Baptist Hospital the charts were attached to babies' histories. We wished to tabulate the articles of diet consumed by these women and see which foods helped most in the prevention of rickets, or to see if we could tell that they had helped in any way. We tabulated these articles for several months but found them too inaccurate for statistical purposes. We found that the women were writing down the articles of food they thought the doctors wanted them to eat rather than the food which they had actually eaten. Our diet lists were then thrown out but we continued our work with the infants.

We wished to put half our babies on cod liver oil at ten days and to give the other half no oil till they showed symptoms of rickets but the management of the C. W. A. would not allow us to do that, but required that all babies delivered by the Association should receive the oil at ten days old. We

then had to get babies delivered by midwives to use as controls. Our reason for starting the cod liver oil at such an early age was that several observers had noted that many infants showed rickets before one month of age.

We had the nurses who were giving post-natal care to the mothers to give the first dose of oil on the tenth day after the birth of the child, in order to show the mother how to give the medicine. We used the same technique as that described by Dr. Martha Elliott. The nurse grasped the infant's face with one hand, placing the thumb and index finger on opposite sides of the face, and pressed in the cheeks until the finger and thumb were between the gums. While the mouth was thus held open, she poured in the oil and held the mouth till the oil was swallowed. In this way the infant could not spit the oil out. These infants were given ½ teaspoon of pure cod liver oil twice a day till they were brought to our clinic at the age of one month. The nurse took with her a sample bottle of cod liver oil which had been given us for our work with the babies and left it with the mother.

When these children were brought to the clinic at the Baptist Hospital at the age of one month the mothers were told of the importance of the oil and were told to continue the same dose till the child was two months old, and then to increase to two spoons daily, and then at three months to increase to three spoons daily, and at four months to give four spoons daily. This amount of oil was to be kept up till the child was one year old.

Our clinic was held once a week. The effort was made to have the children brought back once a month till they were one year old. Each time they were brought they were stripped, weighed, and measured. Measurements were made of their lengths, of their sitting heights, of the circumferences of their heads, and of their chests. A complete physical examination was made each time they came, and a roentgenogram was made of their wrists. Their diets were supervised and the mothers were instructed how to give sun baths to their children and were told of the benefits to be derived from the baths. The majority of the babies were breast fed. At six months a cereal was added to their diets, at seven green vegetables were added, and at nine months egg yolks were given.

We divided our charts into three groups: (1) Those who took cod liver oil regularly; (2) those who took it irregularly, and (3) those who took none at all. We hoped to be able to say that those who had taken it regularly from the tenth day of their lives escaped all signs and symptoms of rickets. But our expectations were not realized as may be seen from looking at table No. 1. To make sure that the children were really getting the oil we asked the mothers each time they came to the clinic how many teaspoons a day were giving their babies, and how many bottles they had used since they had been to the clinic last. We then calculated to see if the daily dose she said she had given her baby when multiplied by the number of days in the month would give the amount in ounces which she said she had used since her last visit. If the two amounts tallied fairly closely we put the baby in the group that had received the oil regularly, but when there was too great discrepancy we placed that child in the group of infants that had received it irregularly. But even with this care on our part, we have the feeling that the only way one can be sure that the disagreeable dose has been given twice a day is to place the child in an institution where an attendant will administer it each time. The babies listed in table No. 1 had the oil administered as regularly as we shall ever succeed in having it given to a group of infants kept in their own homes.

The authors examined the babies each time they came to the clinic, and made rec-

ords of any signs or symptoms of rickets. Sometimes we disagreed regarding slight signs. When we could not agree we marked the sign as doubtful till the next month. Dr. L. W. Magruder, the roentgenologist of the Baptist Hospital, examined with us all roentgen-ray plates. And when one of the three disagreed with the other two, we marked that plate doubtful till the child returned in a month, and then if the plate did not show any change or further advance of the disease we marked it negative. Generally when we suspected rickets in a plate, it would show up clearly in the one taken a month later. Consequently we think our diagnosis of roentgen-ray rickets may be more accurate than our diagnosis of clinical rickets.

In making our diagnosis of roentgen-ray rickets we used the same criteria as that used by Dr. Martha Elliott and Dr. E. A. Park in their New Haven study. We were in New Haven in 1926 and read roentgen-ray plates for three days with Dr. Elliott. The earliest roentgenographic rachitic changes were hair-like projections from the distal end of the shaft of the ulna, less often from the radius, progressing in later films to definite fraying, the contour of the shaft of the ulna becoming ill defined. The later changes were cupping with coarsening of the structure of the shaft. We should like to show on the screen some of the plates from which we have diagnosed rickets, and some that we have considered normal.

In the following table we have grouped the infants, taking the cod liver oil regularly, according to age and sex and have shown how many of each sex showed rickets by roentgen-ray and how many showed it clinically at the different months.

Table No. I.

No. Babies	No. showing roentgen-ray rickets	Percent	No. showing clinical rickets	Percent
1-2 Months old:				
59	1	1.6	0	0
30 males	1	3.3	0	0
29 females	0	0	0	0
2-3 Months old:				
47	8	17.0	2	4.2
22 males	4	18.1	1	4.5
25 females	4	17.0	1	4.0
3-4 Months old:				
46	14	30.4	8	17.3
22 males	8	36.3	5	27.7
24 females	6	25.0	3	12.5
4-5 Months old:				
33	12	36.3	9	24.2
15 males	7	46.6	6	40.0
18 females	5	27.7	3	16.6
5-6 Months old:				
28	12	42.9	9	32.1
12 males	7	58.2	6	50.0
16 females	5	31.2	3	18.6
6-12 Months old:				
19	9	47.3	7	36.8
8 males	5	62.5	4	50.0
11 females	4	36.4	3	27.2

As you will notice from the above figures, we did not keep our babies coming to the clinic regularly as we tried to do. Many of them dropped out and one of them was seen for the first time after it was three months old. Those who remained throughout the year came very regularly. In the above group we had no babies that showed marked clinical symptoms. We had no case of bowed legs or knock knees, and no case of marked chest deformity. The cod liver oil, as used, did not prevent a mild degree of the disease but we had no case of marked deformity. We had no case that showed roentgen-ray rickets for the first time after the infant was six months old. A striking thing about our figures is that they show the disease to have developed in a greater percent of the males than in the females. Up to the third or fourth month they seemed to have been about equally affected. But after that time we notice that a greater percent of males was affected. Between three and four months of age 36.6 percent of the males showed rickets by roentgen-ray and 25 percent of the females, between four and five months of age 46.6 percent of the males showed it by

roentgen-ray and 27.7 percent of the females. And by looking at the table you will see that there was a greater percent of males affected throughout the year. The figures also show that a greater percent of males showed clinical rickets. In the other two groups, that is, those who had the oil irregularty and those who had none at all, a greater percent of the males had the disease.

When we had noticed that the boys were more prone to have rickets than the girls were we went back over our plates to see if there was any difference in the ages at which males developed ossification centers at the wrist bones. We found, that at the time the first plates were made, which was usually between the third and sixth week of age, 59 percent of the males showed no ossification center and that 50 percent of the females showed none. At the end of the first half year 9.5 percent of the males showed no center and 2.3 percent of the females showed none. Joseph Pryor in an article published in the A. J. of Physical Anthropology Vol. 8 states that the ossification in the female is in advance of the male from the time of appearance of the centers in the embryo.

We have not seen any statistics giving the ratio of rickets in male as compared with female children. Dr. Charles Stockard reported in the A. J. Dis. Ch. Aug., 1928, a case in which a fox hound bitch whelped a litter of pups, four of which were males and four were females. One of the males died at two days old and one of the females died at two months old. The other six were fed on the mother's breast and had the same treatment. The three male pups between the ages of ten weeks and three months all showed enlargements of the distal ends of the ulna and radius bones and the typically deformed wrists and bent forelegs of a rachitic animal. One female showed these symptoms to a mild extent, but the other two females showed no sign of rickets. He states that he believes a more efficient calcium metabolism of the females gave them a better development of the bones. Hess recently reported that in the cod fish, the females seems to have a calcium advantage over the male.

After noting that male infants showed a greater incidence of rickets than the female infants, we examined the next 100 boys and 100 girls between the ages of two years and ten, that we saw in outside clinics to see if we should find the ratio there. Among the 100 boys 60 percent of them showed deformities due to the disease and among the 100 girls 35 percent of them showed it. The deformities which we classed as due to rickets were: bowed legs, knock knees, marked rosary, marked epiphyseal enlargement, Harrison's groove.

In table No. II is a list of babies we saw who took the cod liver oil irregularly. They took it irregularly, because in a few instances it made the babies vomit, but generally it was because of the difficulty of giving the disagreeable dose, or because of the carelessness of the mothers.

Table No. II.

No. Babies	No. showing roentgen-ray rickets	Percent	No. showing clinical rickets	Percent
1-2 Months old:				
41	2	4.8	2	4.8
23 males	1	4.3	1	4.3
18 females	1	5.5	1	5.5
2-3 Months old:				
50	11	22.0	5	10.0
24 males	5	20.8	2	8.3
26 females	6	23.0	3	11.1
3-4 Months old:				
48	19	39.5	12	25.0
27 males	13	48.1	8	25.9
21 females	6	28.5	4	19.0
4-5 Months old:				
41	25	60.1	19	46.3
22 males	16	72.6	12	54.5
19 females	9	48.4	7	36.9
5-6 Months old:				
39	27	69.2	26	66.6
20 males	16	80.0	15	75.0
19 females	11	57.8	11	57.8
6-12 Months old:				
41	28	68.2	25	60.9
23 males	18	78.2	14	60.8
18 females	10	55.5	9	50.0

The babies listed in table No. II came irregularly. Of those seen in the second half of the year only 17 of them had not

been seen before they were three months old.

In table No. III is a list of babies who had no cod liver oil at all. It was difficult to find babies who had received no cod liver oil at all, for most of the mothers had heard of the benefits to be derived from taking the oil and most of them had given at least a certain amount to their babies.

Table No. III.

No. Babies	No. showing roentgen-ray rickets	Percent	No. showing clinical rickets	Percent
1-2 Months old:				
40	1	2.5	0	0
20 males	0	0	0	0
20 females	1	5.0	0	0
2-3 Months old:				
35	7	20.0	3	8.6
19 males	4	21.0	2	10.5
16 females	3	18.7	1	6.2
3-4 Months old:				
31	12	38.7	10	32.2
18 males	8	44.4	6	33.3
13 females	4	30.7	4	30.7
4-5 Months old:				
23	16	69.5	12	52.1
11 males	9	81.8	7	63.5
12 females	7	58.3	5	41.5
5-6 Months old:				
20	14	70.0	12	60.0
12 males	10	83.3	8	66.6
8 females	4	50.0	4	50.0
6-12 Months old:				
21	14	66.6	12	59.5
13 males	10	76.7	8	61.5
8 females	4	50.0	4	50.0

In table No. I in which are listed the babies who had cod liver oil regularly from the tenth day of life it will be seen that 42.9 percent of those who remained till they were six months old had shown rickets by roentgen-ray before that time. Had the entire number who started in, remained the whole time we might have found a greater percentage showing it. In table No. II in which are listed those who had the oil irregularly, it will be seen that 69.2 percent of those who were with us at six months had shown the disease by roentgen-ray at that time. In table No. III in which are listed those who had received no oil at all, it will be seen that 70 per cent of those who were with us at six months had shown it by roentgen-ray by that age. Of all the babies we saw before they were six months old and followed into the second half year of life, only one showed rickets by roentgen-ray for the first time after it was six months old. In our whole series of cases we had only three who showed marked signs of the disease. These three were Italian babies who were fed breast milk the first three months of life and then were fed irregular amounts of condensed milk at irregular hours. All three were given cod liver oil at irregular intervals. Our study would lead us to agree with Dr. C. T. Williams that severe rickets is rare in the vicinity of New Orleans.

The average monthly growth of the heads of the rachitic babies and the non-rachitic was so nearly the same that we thought the disease present was of such a mild form that it did not affect the growth of the infants. The average gain in length of the two groups was practically the same, as was also the gain in weight.

SUMMARY.

In our series of cases we found that cod liver oil administered daily from the tenth day of life did not prevent rickets, but there was a smaller percentage of infants affected in the group receiving the oil regularly than there was in the groups receiving iit irregular or not at all.

We found rickets appearing more frequently in the male than in the female.

We found the centers of ossification of the carpal bones developing later in the male than in the female.

The authors wish to express their thanks to Dr. W. W. Butterworth for helpful suggestions and criticisms and also to the nurses of the Child Welfare Association for their co-operation and their efforts to send the children to our clinics).

DISCUSSION.

Dr. Ludo von Meysenbug (New Orleans): Drs. Crawford and Williamson are to be congratulated on this study of the value of cod liver oil in the prevention of rickets. It is a difficult undertaking to carry out a survey of this nature in the outpatient department. In an institution where you

have absolute control over the babies, their diet and medication, the situation is quite different. A number of years ago, when I was working with Dr. Hess in New York, he had such complete control as is ideal for a survey, or study, of a dietary disease. He had, at that time, made a survey of the diet of negro mothers in a certain section in New York City with the same idea in mind that Drs. Crawford and Williamson had—that of pinning the rickets in the baby on the diet of the mother. From his experiment, however, nothing conclusive was deduced as in the study of the doctors here. It is extremely difficult to get a correct statement of what the mothers eat.

I was trying to conjecture why, in this study, the male babies showed more rickets than the females. Neither from personal observation, nor from a fairly extensive knowledge of the literature, have I heard of there being that discrepancy between male and female. In the text books, Holt, Hess, and others, definitely state that there is no difference between male and female in the incidence of rickets. Possibly in the cases studied, the male babies grew more rapidly than the females. But in the paper no mention is made of a comparative study of growth in the two groups (male and female). If the male grew and increased in weight more rapidly than the female, we would expect more rickets, because this disease attacks the more rapidly growing animal. There is much that can be said on this subject. As far as the incidence of rickets is concerned, in our cases we found no discrepancy between the males and females.

In a study based on the correlation of clinical, roentgenologic and serologic findings, the earliest blood chemistry showed no rickitic change until after the twelfth week or third month. This has been borne out by Schmorl in a survey of 386 autopsies: between the ages of three months and four years he found that 90 per cent showed evidence of rickets—90 per cent of babies, dying of any cause whatever, showed definite pathological evidence of rickets, demonstrating the extreme commonness of this disease.

When we speak of sunlight, we think of sunlight in terms of hours. It may surprise you to know that we have not any more sunshine hours here than in New York City, yet here we see nothing like the severe rickets, nor the large number of cases that we see in New York and other northern cities where the number of sunlight hours is approximately the same. As I recall our studies at Touro, we found practically the same per cent of rickets in children that Dr. Crawford reported. Seventy-five per cent of all babies, whether breast fed or not, will eventually, about the first year, show definite evidence of rickets.

We feel, with Hess, that the clinical diagnosis precedes the roentgen-ray diagnosis, that is, beading of the ribs and craniotabes can be detected sooner than the roentgen-ray shows fraying, or cupping of the ulna. The blood chemistry diagosis bears an intermediate position; the blood hosphate is reduced after the clinical, and before he roentgen-ray diagnosis can be made.

The reciprocal relation between diet and sunlight is extremely interesting, that is to say, the protection against rickets afforded by a full diet if ou deprive of sunlight, and, reciprocally, the protection given by sunshine when the diet is ficient.

It was not the purpose of this paper to discuss the comparative merits of viosterol and cod liver oil in the treatment of rickets, but a very interesting observation came out the other day, by Hess, in that connection. In his study, one group of cases was given cod liver oil and one group viosterol. He found, in some instances, that viosterols gave no protection against rickets, but when he changed to cod liver oil, this gave complete protection and cure. I am not familiar with any studies in which viosterol was given to pregnant women to protect the baby against rickets by ante-natal influence, and it is doubtful whether it would, because rickets is not found at birth. This has been repeatedly confirmed by autopsy. Autopsies on newly-borns, or still-borns, have never revealed any pathological evidence of rickets—that has been the universal observation over a number of years.

Dr. Rena Crawford (closing): I wish to thank the doctors for their discussions.

I note Dr. von Mysenbug's comments relative to our study showing the incidence of rickets to be greater in the male than in the female, while it is generally stated that the sexes are equally affected. I am unable to explain why there was this difference. It may be that there is a difference in the calcium metabolism of the boy and the girl, thus rendering the boy more susceptible than the girl. Hess recently published an article in which he said the calcium metabolism of the male cod fish was not so good as was that of the female. I do not know whether the calcium metabolism of the human being has been done with reference to sex. Regarding the therapeutic merits of viosterol in the treatment of rickets, I can only say that during the time we were making our study, viosterol was temporarily off the market, and we did not use it at all.

In the majority of our cases we were able to make a diagnosis of rickets by roentgen-ray earlier than by clinical symptoms. Elliott, in her study, made a diagnosis earlier by rotengen-ray, and I heard Hess say that he had gone over those plates with her and Dr. Park and that they had agreed on the diagnosis of the plates.

Dr. Hilliard E. Miller (New Orleans): I should like to discuss this subject from a different angle than has been presented in the paper and discussions, namely from an obstetrician's viewpoint.

We recognize four different, distorted conditions in a woman's pelvis that are a result of rickets. The first is a generally contracted pelvis, where all diameters in the pelvis are uniformly contracted without any distortion of the general pelvis. Secondly, there is typical richitic flat pelvis. This type gives the obstetrician more concern than any other type of pelvic contracture. In this particular type there is a delayed ossification of the osteod substance of the bone near the epiphysis. Consequently, from the pull of the ligaments, and the tension of the muscles, and weakness of the bone, distortion occurs. The anterior-posterior diameter is always shortened. This condition can be readily recognized on vaginal examination. The pelvis is always shallow, and the promontory confronts the examining fingers immediately. The condition can almost be recognized when the patient is lying flat on the table, because the diameter between the spines is equal to, or even greater than that of the crests. This condition can be still further accentuated later on by the actual development of a second promontory, by the constant drag of the sacro-iliac ligaments, and the pressing forward of the body weight. Further accentuation of this particular type gives rise to the kyphotic pelvis, where you get a twist of the spine with scoliosis, where the transverse diameter is very much shortened, and the anterior-posterior very much lengthened.

If the secret of the prevention and cure of rickets lies in the use of sunshine and generous administration of cod-liver oil, as an obstetrician, and as one who has had a fair number of the above discussed problems, I heartily endorse the giving of these treatments, particularly to the females.

LOW CERVICAL CESAREAN SECTION:

WITH REPORT OF 28 CASES.

HILLIARD E. MILLER, M. D.,

NEW ORLEANS.

A comprehensive study of classical cesarean sections done in the hospitals of New Orleans from 1921-1926 revealed such an astounding mortality for both mother and child that the staff doctors of the various institutions revised their indications for operation and began to perform the low cesarean section. They learned that when the classical operation was performed two-thirds of the patients had febrile convalescences and that in 8.8 per cent there was acute dilatation of the stomach. The maternal mortality for this series was 16.1 and the fetal mortality 18.9.

The report to which I have referred indicates that the classical operation is not a satisfactory way of dealing with abnormal pregnancies and gives the following recommendation: "In view of the fact that the thirty-one cervical operations performed in this series had a zero mortality, even when infection was undoubtedly present, it would be wise for surgeons contemplating cesarean section in the future to familiarize themselves with its technic, especially as the convalescence is almost invariably smoother than after the classical operation."

When this statement was published I had been doing the low cesarean for only two years, but even at that time my results had been so uniformly good that I considered its use in all cases that warranted operation. Since that time I have continued to perform it for there has been a total absence of death and a hitherto undreamed of ease and rapidity of convalescence. After having done the low cesarean in several infected cases and, as a result, familiarized myself with the difficulties of the operation, I concluded to choose this procedure in cases that were elective. As a result I have before me

*Read before the Orleans Parish Medical Society, May 12, 1930.

the records of twenty-eight sections that seem to warrant publication.

Nine of these twenty-eight could be classified as potentially infected in as much as the membranes had been ruptured for nine or more hours before labor, or because trial labor had been purposely allowed. All nine had had from 1 to 5 vaginal examinations, done under the aseptic conditions of the hospital. Three of the nine had been in labor for a few hours and the other six had been in labor from 10 to 12 hours previous to my examination and decision in favor of cesarean section. In this connection it is of interest that all nine of these patients were operated on with temperature of 99° or over, thus substantiating the theory of their probable infection. If the arbitrary rule of 100.5 degrees F. for longer than three days is to guide us as to morbidity following cesarean section, not one of these cases could be said to subscribe to this rule. No instance of even near morbidity resulted in the post partum records of the remaining 19 patients in this series.

Considering the timidity that many of our prominent obstetricians display in their attitude towards the low cesarean, I am glad to be able to give some data about repeating this procedure. Three of the series have had two low sections and a fourth has had three. In these four patients I have found the subsequent operations no more difficult than the originals; the vesico-uterine fold is quite as generous and as easily stripped up as it was for the first operation. In the five repeated operations I was able to demonstrate the site of the previous uterine incision in only one instance; and this, in spite of the fact that in no case had the preceding section been done more than two and one-half years before. Furthermore, in none of these recurrent operations were any adhesions encountered.

It was remarkable to note that the first three or four days post-operative were free from any conditions that approached seriousness. There were only four cases where distention necessitated a flush and as a rule the patients' bowels moved on the second day without laxatives or purgatives. In the great majority of cases there was no record of vomiting and in only two patients did it last throughout the second day. Other things being equal, this quick recovery of equilibrium and the slight degree of discomfort would urge upon us the adoption of the low cesarean section.

These are the aspects of the case as they have presented themselves to me; for it is in response to conditions, as I have found them, that I am now turning wholly to the use of the low cesarean section. It is a well known fact that in doing the classical operation the mortality rises 1 per cent with each hour of labor, and that it rises 10 per cent with every attempt at delivery, thus rendering it bad where the obstetrician wishes to give the patient a trial labor. If a fetid discharge appears the mortality actually rises as much as 15 per cent and in the cases of recovery the convalescence is protracted and turbullent.

My indications for cesarean are definitely limited. Absolute contractions, borderline types of contraction where trial labor results in no engagement of the head, funnel shaped pelves and uteri that have become fixed by previous abdominal operations all call for cesarean section. The presence of obstructing tumors such as exostosis of the pelvis or the lodging of a fibroid or ovarian cyst in the true pelvis are also reasons for choosing cesarean section. In spite of the fact that the toxemias of pregnancy and placenta previa are best handled conservatively, I do occasionally perform the low cesarean section in the face of such complications if I meet them in a primipera with a long, rigid cervix; provided that the baby is at or near term.

The management of the placenta is extremely important and a great deal of blood loss can be obviated by the careful handling of this feature. As soon as the baby's head is delivered, 1 c.c. of pitutrin is given intramuscularly, and after the delivery is

complete, a hot towel wrung out of saline is placed in the uterine cavity for a short time. No attempts at manual extraction should be instituted for within four or five minutes the pitutrin will have so far contracted the uterus that the placenta will have separated and dropped into the lower segment. Even in the days of classical section where the chances of cutting directly into the placenta are greater, the use of pitutrin was satisfactory in checking all flows, making the use of retained gauze packs unnecessary.

After high cesarean section uterine ruptures occur in from 4 to 14 per cent of the cases whereas, in reviewing the subject, De Lee and Greenhill[1] have found only 12 reports of rupture after operation through the lower segment. Gamble[2] of Johns Hopkins has studied uterine scars in connection with temperature charts and found no apparent correlation; but it has been my experience that a febrile convalescence often indicates an imperfect healing of the wound. Apart from the question of temperature the incidence of rupture will be materially lessened by placing the incision in the lower segment for this portion of the uterus acts only in a passive way during labor and during the later involutionary stages, serving to little more purpose than the vaginal canal.

Furthermore, if infections do develop, they are less likely to be of a dangerous character. Hofbauer[3] has demonstrated the presence of a defensive mechanism in the lower segment and broad ligaments during pregnancy. Infections of the pelvis are generally known to be less severe and tend to localize to an extent that is true of no other part of the body. The lymphatics of the lower abdomen are less numerous, so serous transportation of bacteria is extremely limited.

An attempt to avoid spilling potentially or definitely infected material into the abdomen is the principle upon which the low cesarean section rests. It is with this thought in mind that the vesico-uterine fold is so carefully cut, clipped from around the bladder, folded upwards, and finally clamped to the abdominal walls. There is no excuse for a dextrous surgeon's puncturing the bladder or entering the vagina. The nature of the operation and the structural peculiarities of the low segment render security to the parturient woman to an extent that has not hitherto been possible in similar cases. Statistics verify this statement. Williams,[4] for instance, has done 20 low cesareans since 1921 with a zero mortality, whereas his general average is 3.33 per cent. I. F. Stein and M. L. Leventhal[5] report 40 cases of laparothrachelotomy without death.

It is not necessary to describe the operation itself, for excellent papers have made its technic familiar, but as there is still considerable debate as to the best means of suturing, I will give my methods and its results. Chromic catgut of the twenty-day variety is routine for the entire repair of the uterus; it is used in a continuous suture incorporating the inner two-thirds of the uterus and endometrium and a second tier of the same gut is used for the outer third. Afterwards, the flaps are released from the peritoneum and a continuous suture again approximates their cut edges. The more passive function of this segment makes the stitch quite as safe as the interrupted one. It must be admitted, however, that I had no difficulty in using the same type of suturing in the classical operation and found no tendency of the wound to pull or break, even when submitted to the stress of involution and future pregnancies.

I grant, too, that in the delivery of the baby the older operation is extremely simple, but this difference of ease is no real argument against the use of the low cesarean. The child may be extracted by application of a pair of straight forceps to its head, or, in whatever position it may be lying, it can be easily rotated anteriorly by inserting the fingers in its mouth; after this, the forceps may be applied or the head expressed by the assistant's making deep

pressure in the groins. In one case, where the baby was presenting transversely, I found no difficulty in correcting the position into a breech by inserting a hand and grasping a foot. That none of these measures are detrimental to the child is shown by the fact all twenty-eight of the babies so delivered were alive and well when they left the hospital.

Fear of the longer time expended in performing this operation is unnecessary. Local anesthesia may be used if the patient has toxemia or cardiac complications. Except for one instance in the present series, I have found ethylene and ether suitable for all purposes. Under their influence the sections in this series averaged 35 minutes. The longest time of operation was sixty minutes and the shortest time was 25. In this latter time five of the twenty-eight cesarean sections were effected.

Before closing there are two additional points that I would like to bring to your attention. The first is the question of sterilization. After two cesareans I suggest its advisability, if the first child is healthy and the second's viability is assured. I do not urge this procedure but leave it to the discretion of the husband and wife after telling them of the risk that they may be taking by having more children.

Lastly, I would stress the wisdom of post-operative examinations. All of the women of this series have been seen and, within the comparatively short time of two months after operation, I found the involution to be complete and the organs themselves compact and in their correct positions.

DISCUSSIONS.

Dr. E. L. King (New Orleans) Just a few comments, supplemental to what Dr. Miller has said of this operation.

When caesarean section is indicated, I believe that the low cervical operation is the method of choice because of the advantages it offers over the high operation. Among the chief disadvantages of the latter procedure is the frequency of rupture of the scar in subsequent pregnancies and the danger of sepsis in cases of unduly prolonged labor and when previous attempts at delivery have been made. The classical caesarean, however, has the advantage of being much easier to perform.

I do not know of any instance where a great number of cases have been followed over a long period of time. For anyone to follow five hundred or a thousand cases from a general hospital for ten years would be quite a job, but the information thus obtained would furnish us with more accurate statistics than we have to offer at present, especially as regards the incidence of rupture of the scar.

This incidence is variously estimated; it is conservatively estimated at four per cent—a better figure would be ten per cent in the classical operation. The frequency of rupture of the scar has been rather deeply impressed upon me because in Charity Hospital we had four ruptures of the scar in a year, or a year and a half, one done by ourselves and three by other operators.

A point well worth knowing is that the indications can be extended a great deal more in laparotrachelotomy than in the classical section. In infected cases and when an attempt has been made to deliver by forceps, a very great risk is taken if a high section is done on that patient, whereas with the low, it seems, you can become almost reckless and take cases that have been in labor for hours and days. Of course, if we are too free in regard to this indication, some will die of infection, but the hazard is greatly minimized. In our service we have taken cases handled by ourselves and by others, and where attempts at forceps delivery have been made, and gone ahead and done low section and gotten by.

The smoothness of convalescence is another point in its favor. As Dr. Levy mentioned, dilatation of the stomach is practically non-existent. The fever has a lower curve, or there is no fever at all in most cases and recovery, as a whole, is uneventful.

Some operators pack the uterine cavity as a routine, allowing the pack to be expelled or delivered from below. As a rule we do not do this —we generally remove the placenta at the time. While we have not tried leaving the placenta in, it might, in some cases, be a good thing.

Dr. Walter E. Levy (New Orleans) I fully subscribe to all that Dr. Miller says. He has described, quite in detail, the technique employed by most of us who perform this operation.

Following low section dilatation of the stomach is rarely, if ever, seen—I have never seen a case. In my cases (in private practice and the out-patient service I have personally done thirty-two low sections) there was no instance of sub-

sequent severe vomiting or dilatation of the stomach. During my intern and house officer days the stomach tube was frequently resorted to following classical section and I have often seen patients suffering with nausea and distension from twenty-four to forty-eight hours at a time, with the stomach tube inserted during that entire period. After the low type of operation my patients are given a soft diet—I see no reason whey they cannot eat.

Of course, some of my friends here know that, like the country doctor, "I, too, had a case." My most remarkable case was a woman at the Flint-Goodrich Hospital who had been left in labor forty-two hours by the intern. When I saw her she had a fetid discharge, contractions were feeble, and her temperature was 102°. I performed a low Caesarean and she made an absolutely uneventful recovery.

Dr. Miller failed to mention the suggestion of DeLee not to remove the placenta, but leave in to discharge through the vagina, thus lessening the danger of infection. Some operators take out the placenta and insert an iodoform gauze pack, leaving one end to emerge from the vagina. I do not know whether this is absolutely good practice or not. In low section, with careful walling off with a pack, you are pretty nearly safe; the lower abdomen will take care of almost any reasonable amount of infection.

I wish to illustrate a point brought out by Beck, who works with Polak.

(With drawings, Dr. Levy demonstrated Beck's method of incising the peritoneum twice instead of once, to overcome the tendency, as when only one incision is made, of the angles splitting, tearing and running to the side.)

Dr. Hilliard E. Miller (Closing) I would like to say just one word on the use of the pack in the uterus after a cesarean section has been done. I have never been convinced that it is a procedure that is necessary or one that is altogether free from evil effects. This is particularly true when an elective cesarean is done, as the cervix is little, if any, dilated and the uterine contractions which were necessary to dilate the cervix and assist in the expulsion of the pack would be quite a strain on the new incision and besides, the pack, during its stay in the uterus helps to stagnate the lochial discharges which in turn, increases the chances of infection. The same remarks apply to leaving the placenta in the uterus.

I still maintain that 1 c.c. of pituitrin, given after the baby is delivered, will give the best results; always provided that one waits for its action to separate the placenta and force the uterus to firm contraction.

AMYTAL AS AN ANESTHETIC.

C. T. CHAMBERLAIN, M. D.,

NATCHEZ, MISS.

During the past two decades the art and science of surgery has made such progress from the standpoint of technic and mechanical manipulation that we, perforce, must for a while stand still. We, as surgeons, are intensely interested in and are constantly striving for a safer and better anesthetic.

Reference to attempts at anesthesia and analgesia coexist with human history. The Egyptians made attempts at analgesia by means of pressure and tourniquets. Hickman, of England, as early as 1820 and through 1828 experimented with anesthesia on animals. The honor to be the first to use ether on human beings belongs to Crawford W. Long, of Georgia, who first used it as an anesthetic in 1842. Independent experiments, at the same time, were carried on with ether as an anesthetic by Horace Wells, a dentist of Hartford, Connecticut, and by William G. Morton, of Massachusetts General Hospital, Boston, in 1846. The name "anesthesia" was given to the condition brought on by the administration of ether by Oliver Wendell Holmes in the same year. In 1848 chloroform was first used as an anesthetic by Sir James Simpson, of Edinburgh.

The attempt for safer anesthesia went on, and still goes on. From general anesthesia the next step was local anesthesia. Cocain, discovered by Neumann in 1860, was first used as a local anesthetic in 1884 by Koller. The first attempt at spinal anesthesia was made by J. L. Corning, of New York, in 1885. Vast strides have been made within the last few years in making anesthesia safer. Our general anesthetics all, at first, were given by inhalation. Ether, however, was later used both intravenously and by rectum.

None of these methods have proven ideal, and we are still striving for the ideal. I am not attempting anything original in this paper, but I do believe that our cause will be aided if all of us who have had any experience with sodium amytal as an anesthetic will collate and give our experience.

In our clinic, we have successfully used sodium amytal in a fair variety of cases. We have had so far head injuries and a fair variety of abdominal and vaginal work, and herniotomies. In our upper abdominal work so far, we have been unable to use the sodium amytal without the aid of gas or local anesthesia. We found that in cases where the peritoneum was opened, and any extensive manipulation made, the aid of local anesthesia or gas was necessary. In the nephrectomies we were able to use sodium amytal alone, with, however, local anesthesia of the skin. In all of these cases, however, the local or general anesthetic had to be given in much smaller quantities than under ordinary circumstances, and we obtained much more satisfactory relaxation. The ages of our cases ranged from eight years to sixty-two years.

In our work we have used exclusively sodium amytal (sodium iso-amylethyl barbiturate) manufactured by Eli Lilly & Company. I want to take this opportunity to express my thanks to Messrs. Eli Lilly & Company for their unfailing courtesy and hearty cooperation in our work.

In the induction of anesthesia by sodium amytal, the patient is usually carried rapidly through the stages of anesthesia. Following its use, excitement, laryngo-spasms, etc., are rarely observed. Sleep, as a rule, is obtained in three to five minutes and surgical anesthesia occurs within fifteen to thirty minutes. The dosage varies with the weight of the patient and the nature of the work to be done. In minor surgery, 10 to 15 milligrams per kilo of body weight is usually sufficient. Twenty to 25 milligrams per kilo of body weight is best in major surgery.

Our technic is about as follows:

The weight of the patient is obtained, when possible. Fifteen to 30 minutes before the administration of amytal a hypodermic of morphin sulphate, grains, ¼; hyoscine hydrobromide, grains 1/200, is given. I am speaking, of course, of adults. Unless the patient is unusually nervous the amytal is not administered until after going into the operating room. While the surgeons are scrubbing up the amytal is administered by an assistant. The solution always should be made extemporaneously, with distilled water.

Under no circumstances should any solution be injected which is not perfectly clear. The solution should be administered slowly at the rate of one c.c. per minute. One gram is dissolved in 10 c.c. When as much as one gram and a half is used, about 15 c.c. of solution is required. Usually, in three to five minutes the patient is asleep. In our experience so far there has been no stage of excitement. The patient goes to sleep quietly and naturally. Our patients receiving a maximum dose of amytal sleep from three to ten hours and are quiet and drowsy for 24 hours. We have noted no stage of excitement. During the first eight or ten hours after the operation the absence of nausea and retching is very gratifying to both patient and surgeon. There is invariably an initial fall of blood pressure of from 10 to 15 mm. This, however, returns to its original point within 15 to 20 minutes. The respiration is slowed and deepened. The pulse rate is not affected, except in those nervous cases with a rapid pulse, when it is slowed to normal limits within five to ten minutes. Although it has been shown that 73 per cent of sodium amytal is eliminated by the kidneys, we have noticed no by-effect on the kidneys with it, either immediate or remote.

In uncomplicated herniotomies and appedectpen, sodium amytal in one gram doses can be used successfully, combined with a small amount of local anesthesia for the skin and subcutaneous structures.

In deep pelvic work we have found it necessary to combine sodium amytal with ethylene. A minimum amount of the ethylene, however, is used. We have noted no stage of excitement, either during its administration or as a post-anesthetic complication.

Our experience in obstetrics has been somewhat more limited than in surgery. We have, however, noted the following: First stage of labor: The dose of sodium amytal necessary to produce analgesia will also frequently stop uterine contractions. Sodium amytal produces no detrimental effect upon the fetus. Second stage of labor: The dose of sodium amytal which produces analgesia is not so likely to stop uterine contractions as is the case in the first stage. The dose necessary to produce analgesia unaccompanied by cessation of uterine contractions is often apt to produce restlessness during the contractions, or pain. However, there is no memory of any pain. The baby at times shows signs of combined pallor and cyanosis, but no serious cases of asphyxia have occurred. Third stage of labor: The uterus contracts well and there is no excessive bleeding.

The maximum dose we have administered in obstetrics has been 800 milligrams.

In our general surgery we have given no larger doses than one and one-half grams, the average dose being one gram.

Our conclusions are as follows:

Disadvantages: First, the difficulty in some cases of getting into the veins, with slough at sight of injection if any of the solution is allowed to get into the surrounding tissues. Second, lack of knowledge of its lethal dose, and of any drug which will rapidly counteract the effect of sodium amytal, should the necessity arise. Ephedrin and caffein only partly counteract such effects.

Advantages: First, sodium amytal, in the present state of our knowledge, is an ideal general anesthetic in doses ranging from 800 milligrams to one and one-half grams in conjunction with gas or local anesthetic. Second, it is pleasant of administration, relieving the patient of much of the fear of the operation, and is pleasant in its after-effects, greatly diminishing post-operative discomfort. Third, it is safe in cases with pulmonary complications. Fourth, it does not cause irritation of the respiratory passages, and hence its administration is not followed by accumulation of mucus in the throat, coughing and vomiting. Fifth, with further knowledge of its lethal dose, amounts may be administered with the view of obtaining greater relaxation with safety. Sixth, sodium amytal, very possibly, may prove to be a revolutionary factor in surgical anesthesia.

FRACTURE OF THE FEMUR.*

F. H. HAGAMAN, M. D.,

JACKSON, MISS.

For an orderly discussion of fractures of the femur it is necessary from the standpoint both of treatment and prognosis, to divide them into several groups according to their location on the bone. We shall, then, for the sake of clarity, arbitrarily divide the femur into four portions: 1. The anatomical neck and trochanters. 2. The surgical neck. 3. The upper third and middle third of the shaft. 4. The lower third of the shaft and condyles. Available for the reduction and fixation of any fracture are: I. Immediate closed reduction by manipuation and fixation with plaster of paris bandage. 2. Continuous traction. 3. Operative reduction. 4. Any combination of these.

For satisfactory immobilization with plaster, we have found that a double spica bandage, fitting snugly about the pelvis, and extending to the knee of the well side, is necessary, and have adopted it exclusively. The bandage must extend to the toe of the

* Read before the Section on Surgery at the Sixty-third Annual Session of the Mississippi State Medical Association, Vicksburg, May 13, 1930.

affected side with the limb in the position that equalizes antagonistic muscle action.

Continuous traction is accomplished with adhesive fixed to the skin after the method of Taylor, alignment being maintained with Thomas splint and Pierson knee attachment, and the splint suspended from a Balkan frame. Traction is of the sliding type attached to a cross bar at the foot of the Balkan frame, and not from the end of the Thomas splint.

Operative reduction is reserved for those fractures which show unsatisfactory opposition after a fair trial of one or both of the other methods. In accordance with the teaching of Sherman, we feel that it is wise to wait ten days for the organization of the clot. During that interval three days preparation of the skin is carried out to minimize the possibility of infection.

Any operative procedure on bones is necessarily prolonged, because superimposed on the operative work is the time necessary for application of plaster. With the use, in the past, of general anesthetics, we have expected and usually have encountered a moderate to severe degree of shock in all operative cases. Since the perfection of spinal anesthesia, however, our shock is minimized, and I now approach open reduction of fracture of the femur with much more equanimity than when gas or ether was relied upon for anesthesia.

Fractures through the anatomical neck or trochanters, when seen soon after the injury, are practically all amenable to reduction by manipulation and immobilization with double spica bandage.

CASE REPORTS.

Case 1. Representative of fractures of the anatomical neck is the case of Mrs. C., aged 64 years, who February 10, 1928, slipped on the stair and fell on her right side. She was unable to arise and there was pain in region of the right hip. When seen shortly after the accident, she was in moderately severe shock, the right lower extremity was in external rotation, there was some increase in prominence of the right trochanter, and any movement of the limb caused severe pain. A roentgenogram showed a transcervical fracture. The following morning, after the initial shock had subsided, Whitman abduction treatment was carried out under ethylene anesthesia. Roentgenogram made the following day showed reduction. After eleven weeks the plaster was removed, and manipulation showed the fracture united. Following the removal of the plaster there was moderate swelling with stiffness of joints, which was treated with massage. No weight bearing was allowed for six months from the time of accident. September 5, 1928, roentgen-ray examination showed firm bony union with three-fourths of an inch shortening of the limb from absorption of bone in the anatomical neck, and she was discharged as recovered. Recent communication states that her only disability is shortening, which does not interfere with the performance of her usual duties.

Case 2. As an example of fracture through the trochanters, I have chosen Mrs. G., aged 85 years, who on December 1, 1927, fell from a low platform, and was unable to get up. She was put to bed where she remained until December 21, with Bucks extension to the limb. On that date she was brought to the hospital and a roentgenogram showed a pertrochanteric fracture, which extension failed to reduce. Under ethylene anesthesia, December 22, Whitman abduction was applied, and a follow-up roentgenogram showed good reduction. At the end of eleven weeks the plaster was removed, and bony consolidation was complete. She was kept in bed and wheel chair for twelve weeks longer, during which time physiotherapy was used. Weight bearing was allowed at the end of six months, and one year later, she wrote that she walked without difficulty or pain.

Injury to the first portion of the femur often occurs in the aged, efficient treatment of which is usually successful, and when successful, prevents years of invalidism. A certain percentage do not survive, their demise, however, in my opinion, being due not to reduction of the fracture but in spite of it.

Fracture of the second portion of the femur, does not lend itself so readily to reduction. Those cases of fracture of the surgical neck with comminution into the trochanters, present especial difficulties.

Case 3. Mr. M., aged 60 years, on October 6, 1928, was driving a truck which turned over and pinned him beneath it. In view of the obliquity of the fracture, it was thought unwise to attempt reduction by the abduction treatment, since it was likely that forced abduction would cause internal displacement of the lower fragment. Traction, therefore, was attempted, but did not result in satisfactory reduction. At operation, no difficulty was encountered in securing proper alignment,

which was fixed internally with a boiled beef bone peg and kangaroo tendon encircling the bone. Plaster was applied and convalescence was uneventful. Ten weeks later the plaster was removed by his home physician and I did not see the patient again until April, 1930, when he returned for treatment of acute retention of urine. Roentgenogram then showed firm bony union with conclusive evidence of vitality of the boiled beef bone peg. I mention this since doubt has been expressed as to the fate of exogenous bone grafts. Here, at least, is one example in which it has taken on vitality.

Case 4. Mr. F., aged 72 years, injured the left thigh in an automobile accident July 8, 1928. He was brought at once to the hospital, where roentgen-ray examination showed fracture of the surgical neck. The limb was placed at once in traction, and follow-up roentgenograms showed fairly satisfactory reduction. His physical condition remained good, but in a few days he went to pieces mentally, was unable to sleep or eat, talked at random, and begged continuously to be allowed to go home. In view of the mental state, and the fact that apposition of fragments was only fair, it was decided to do an open reduction. On July 21, internal fixation was accomplished with a vanadium steel plate, and plaster applied. On July 25, he was allowed to return home, where his mental condition cleared up rapidly. Eight weeks after operation I went to his home and removed the plaster up to the knee so that motion of that joint could be started. Four weeks later, or twelve weeks after operation, the entire plaster was removed, and weight bearing was allowed at the end of six months. His son reports to me that he has entirely recovered, but neither his son nor I can offer sufficient inducement to get the old gentleman to return to the hospital for another roentgenogram.

The surgical neck is rich in blood supply, and fractures in this region heal readily without absorption of bone.

For fractures of the upper and middle third of the shaft, we have found the method of Dr. Willis Campbell, so lucidly set forth in his recent text, to be unsurpassable.

Case 5. Master M., aged 4 years, on January 19, 1928, was struck by an auto, and brought to the hospital immediately for roentgen-ray examination which showed a transverse fracture of the shaft. There was no evidence of shock, and immediate reduction of the fragments under ether anesthesia was attempted. With the patient on a fracture table, the knee and hip were flexed, and pressure was made, so as to cause an anterior angulation of the thigh at the site of fracture. This was continued until end to end apposition was secured. The angulation was then reduced, and the thigh placed in alignment. Position of fragments was checked with fluoroscopy, and a double spica bandage applied in the usual manner. Flexion and abduction of the hip were maintained to overcome the antagonistic action of the powerful flexor and abductor muscles of the hip. The knee was flexed to allow for better fixation of the lower fragment. Four weeks later, a roentgenogram made through the plaster showed perfect reduction, and a short single spica bandage was applied to prevent bowing at site of fracture when weight bearing was allowed. Four weeks after that the second plaster was removed. There was anatomical alignment of the limb, with no shortening, and he was discharged.

Although it is necessary to apply traction in oblique fractures of the shaft to secure and maintain reduction, it is often possible to handle them by a method similar to the above.

Case 6. Master J. C., aged 3 years, on December 7, 1927, fell from a horse and injured the left hip. A roentgenogram showed an oblique fracture of the shaft. With the patient on a fracture table under ether anesthesia, the knee and hip were flexed and traction made until reduction was complete, as shown by fluoroscopy. A snug fitting plaster bandage was applied with the limb in this position, and a roentgenogram the following day, showed reduction. Eight weeks later, after removal of plaster, there was good alignment of the thigh, and no shortening of the limb. A short, single spica bandage was applied, which was worn for four weeks, at which time he was discharged.

A type of fracture of the shaft which usually requires operative reduction is that of:

Case 7. Mr. J. P., aged 19 years, was in an automobile accident February 13, 1930, and suffered a fracture of the right femur. An attempt was made to secure apposition by immediate manipulation, and the usual plaster bandage was applied. The following morning, however, position as shown by roentgenogram was unsatisfactory, and on February 26, 1930, under spinal anesthesia, open reduction was done, internal fixation being accomplished with a Sherman plate. Since all the periosteum was accidentally stripped from the short fragment during its reduction, some apprehension was felt as to its ability to weather the storm. A roentgenogram taken May 2, however, showed good callus formation, and I feel that the prognosis is good.

Transverse fracture of the lower third of the shaft may also be managed quite satisfactorily by the Campbell method, the procedure being the same as for fracture higher up. For those fractures which are oblique or extend into the condyles, continuous traction is our method of choice.

Case 8. Mrs. F., aged 54 years, was in an automobile accident on February 20, 1930, and received fractures of the second, third, and fourth and fifth ribs, compound, comminuted fracture of the right patella, and a comminuted fracture of the lower end of the right femur. When seen, she was in severe shock, but responded to treatment, and the right leg was placed at once in traction-suspension. An alcohol dressing was placed on the punctured wound over the patella. February 23, roentgenograms in antero-posterior and lateral planes showed good reduction of the femoral fracture. March 9, healing of punctured wound over patella was complete, and three-day preparation of the skin was started, preparatory to open reduction of the patella. Suspension ropes were re-arranged to allow for free access to the knee region and on March 12, under spinal anesthesia, the operation was done in the patient's room without disturbing traction-suspension. Seven weeks after the accident, roentgenogram showed good callus formation, the apparatus was removed, and physiotherapy started. May 2, roentgenogram showed bony union, there is 45 degrees of motion in the knee, the patella is united, as shown by patient's ability to raise the limb with the knee fully extended. Extreme comminution of the patella prevented accurate replacement of the fragments, but no fear is felt in regard to function since care was taken to suture the patella ligament. Physiotherapy will be continued, and weight bearing at the end of six months.

DISCUSSION.

Dr. T. E. Ross (Hattiesburg) It is not very often that one of the older men gets a chance to discuss a paper. When a fellow gets up and has not much to say about a paper he generally says what a fine paper it was. That is what I am going to do. His methods are as correct as modern surgery can possibly accomplish at this time. His definition is good. We rarely see one out of line except where he showed us. Although he said it was arbitrarily done, it is nicely done. Speaking of this traumatic surgery and industrial surgery during the nineties and the first decade of this century, before the roentgen-ray and fracture table were in use, the young fellows do not know anything about what we had to struggle with. The first question asked would be "have you been able to set the leg?" We would say, "yes," but we could not tell whether we had it set or not, and probably not. However, we struggled along, and usually the patient was able to walk at least. No doubt often we did secure good coaptation. Often the alignment might have been all that we could ask, but we did not know it. Sometimes the limb was so large that you could not tell what you were doing. Thank God for the roentgen-ray and thank God for the fracture table. Without those Dr. Hagaman could not do much better than we did. As to fixation, when you make a roentgenogram get it in proper alignment, as best you can. Fixation should be done with a great deal of study, and you cannot fix it the same way, following anybody's method exactly in every case. You have to adapt your fixation according to the particular fracture as shown by the roentgenogram. You have to take into consideration the position of the patient, and you have to take into consideration the age of the patient. Fractures in the aged, especially in the very old, are common, and are hard to take care of. They fall down the step of a stair or stumble, and there is a fracture. A large percentage of you older men know what we were up against. We did not know how to handle them. We find now, however, in this age of automobile accidents, in which many old people are injured, that they do well and frequently walk again without limping. These cases are probably due to the fact that the bones were in a healthy state, free from any atrophied condition. We get better results and better percentages, better end results and less catastrophes. We used to have trouble in getting traction. Now we have much better apparatus and the crude methods we used are almost entirely done away with. In trying to produce enough traction we often caused trouble. The Taylor method, the Baldwin frame, and the Buck's extension mentioned, we did not have, so it was impossible for us to get the same results. If these young fellows, with all the new things and up to date methods they have, if they cannot do as well or better than we did we have spent our money educating them in vain. In the absorption between the ends of the fragments, I am persuaded he will agree that this occurs mostly in those cases of anatomical neck and trochanter, and you will get it because of the age of the patient. We do not relieve the tension there as much as we should, and the muscular tension with pressure on the end of the bone will cause absorption of the end. You will get the shortening you speak of. To relieve that, some traction even where the alignment is good, will be effective. As to ununited bones—I do not know what his experience has

been in finding the reason why. Mine has been that if they were somewhat imperfectly reduced, and with soft tissue or a cross piece of bone there, it is proper to go down in by open method and clean out these fragments, and you will find that you get prompt union. He spoke of compound fractures of the femur, but not of fractures of the other part of the bone nor of impacted fractures. I would like him to say something about that.

Dr. John C. Culley (Oxford): The worst advertisement a physician or surgeon can have is a poorly reduced fracture, and the best is a well reduced fracture. Dr. Hagaman has brought up a subject well worth considering. On account of the automobile, airplane, and other fast methods of transportation, we are going to have more fractures year by year, and I have found it so. Dr. Ross has mentioned one thing, a fracture table. I have that it has well repaid its cost, in ease of reduction. But there is another method of reducing fractures by traction and placing on casts whereby we can get results, that is spinal anesthesia. I do not mean it should be given in every case, but you can give it any place, under any conditions, if you follow the technic. I have had wonderful results. Another point I would like to mention: do not forget in every case of compound fracture to give that patient tetanus antitoxin. I have seen one case in my experience, a child with compound fracture of the wrist, brought in fourteen days after the accident with tetanic convulsions which could not be relieved. I have seen cases of gangrene following fracture. Serum should be administered, and then if you do develop gangrene you will have a clear conscience at least. Always take a Wassermann as routine procedure. A positive Wassermann may not prevent union of the bone, but if you have a Wassermann with 4+ blood findings, you will feel better if you pick it up before the other fellow does.

Dr. F. H. Hagaman (closing) I agree thoroughly with all the points brought out in this discussion. Dr. Ross, whom I thank very much for what he has said, has asked me to say something about impacted fractures. I have had no experience with impacted fractures of the femur except in the anstomical neck, and in considering methods of treatment I have made no differentiation between them and unimpracted fractures.

HEADACHES OF NASAL ORIGIN.

H. R. FAIRFAX, M. D.,

BROOKHAVEN, MISS.

What is more common of all human ailments than headache? As nasal and paranasal defects are probably the commonest affections among otherwise normal persons, so also are the nasal and paranasal the most common of all headaches.

When patients complain of long continued troublesome headaches without any apparent evidence of deep-seated internal disorder we should at once suspect the nose or sinuses as being the location of the trouble.

As the fifth pair of nerves are the most important of the cranial nerves of sensation and many of their terminal branches are distributed in the nose and the nose is so near the centre of the head, it is easy to believe that many headaches could have their origin in the nose. The fifth nerves coming from both sides as they do and with so many branches and other points of distribution, it is not always easy to differentiate a nasal from some other headaches with a different origin.

Pain may arise from a simple coryza, also from vasomotor disturbances which produce tension or pressure upon the meninges or upon the end organs of sensation in the nose. Pain may come directly from an injury to the septum, from a deflection of the sputum, mucus membrane, tumors, malignant or benign, hyperplasia and the narrowing of the natural ostia encroaching upon the adjacent nervous structures, the last mentioned being the most frequent cause of a headache with a nasal origin. Another cause is irritating dust and pollen from the air, causing a congestion and a swelling of the mucus membrane. This is usually made worse by bending forward with the head low. Still

*Read before the Section on Eye, Ear, Nose and Throat, at the Sixty-third Annual Session of the Mississippi State Medical Association, Vicksburg, May 14, 1930.

other causes are contractions from post-operative scars, inflammations which include not merely those actually occurring within the mucosa, periosteum and bone, but also the effects of the products of inflammation upon the surrounding nerve endings as in the case of crusts of mucus and adhesions.

Then indirectly the paranasal sinuses, dental caries, etc., are causes of headaches.

I have noticed this perhaps more frequently where the maxillary was infected and the pain was reflected over the region of the frontal sinus with a little tenderness, but seldom any pain over the maxillary region.

No general rule holds good for the differentiation of headaches of nasal origin from other headaches. They usually occur in the morning and almost never at night. Exceptions to the rule are the acute empyemas with obstruction and the pronounced septal infections which ache at any and all times. Posterior ethmoidal and sphenoidal inflammations may cause vertigo or occipital headaches.

The treatment is, of course, to locate and remove the cause, but it is not always easy and simple as this sounds. However, with or by the use of good illumination, transillumination, the roentgen-ray and a few instruments for direct observations, much can be accomplished toward removing this frequent and annoying menace to health and much added to the comfort of the patient.

Dr. Sluder's investigations and experiments have led to much relief of many previously obscure headaches which may now be attributed to irritation or inflammation of the nasal ganglia. These ganglia are very small and are found close to the sphenopalatine foramen just posterior to and immediately above the posterior end of the middle turbinate bones. These ganglia may be cocainized and if the headache is relieved or disappears shortly thereafter you may usually say that these ganglia are the seat of the headache. For a more permanent relief applications of a two per cent solution of silver nitrate, one per cent solution of formalin, two to 20 per cent solution of mercurochrome, or 10 per cent solution of phenol in glycerin may be used. These irritating applications should be preceded by a mild cocainization of the nasal path to the ganglia using four to five per cent solution of cocaine. If the local applications fail to give the desired relief, Dr. Sluder recommended the injection of a five per cent phenol solution in 95 per cent alcohol and one-half of one c.c. of this solution is used.

DISCUSSION.

Dr. George E. Adkins (Jackson): If there is any one symptom in medicine which calls for real team-work, it must be headache. The sinuses, maxillary, sphenoid, ethmoids — can all produce trouble; narrowing of the nasal passages—too large a nasal passage will produce an atrophy and cause headache. Dental caries, especially unerupted teeth, often is the contributing factor. Such things must be relieved from their source. Dr. Fairfax spoke of Sluder's work on the sphenopalatine ganglia. That is all well and good in the relief of symptoms. I think the thing to do is to find out why the ganglia were susceptible. It takes team-work to find out. I do not know of one single ill affecting the human body that will not produce headache. I have attempted to classify headaches as toxic or non-toxic. Sinus headache could be classed as either. When we remember that it can be produced by a burn, housemaid's knee, prolapsed uterus, inactive colon, from starvation, from overeating, from loss of sleep and from over-sleeping, can be produced by anything that can affect the human body, it is hard to say that a headache is of nasal origin. One might be able to tell his patient that he was going to relieve him by nasal treatment, but as long as one is not sure, how can we promise that patient we are going to relieve him through the nose. We can say we hope so, and that we will do what we can. I consider that headaches are due to some pressure or toxemia anywhere in the body. Somebody has brought in a new classification of refraction, which would be under either one of the two. I can figure out but two causes for headaches, and these causes may be located anywhere in the body.

Dr. L. S. Gaudet (Natchez): I am very glad that our good friend Dr. McWilliams called on me today to discuss this paper, if for no other reason than the fact that I have been suffering from nasal ganglia headache for about twenty-seven years off and on. I have had a submucous done, thanks to the eye, ear, nose and throat men, have had the ethmoids cleaned out; all the sinuses drained; the

nerve resected twice. After about two months the same trouble comes back and every two or three weeks I have to go to bed with cocain and aspirin and a hot water bottle, and after ten hours sleep I will be all right until the next time. The treatment, we all agree, is to locate and remove the cause, but that is not so easy to do. He has covered a multitude of sins in saying that—locate the cause. My case is a good illustration. We have attempted to eliminate every possibility, and we have not been able to find the cause of it, because I still have the trouble. I have discovered one thing that perhaps many men have overlooked. Whenever I have a case that gives me a good deal of trouble and worry, then I go to bed with a headache and sleep it off. The question of headache is always interesting, just as Dr. Fairfax and Dr. Adkins said, because we have it with us always more or less. I do not believe there is one human being in the world who has not had a headache at some time or other. Dr. Adkins has brought out an interesting point, because I have had some experience along that line—an unerupted tooth. I have seen cases that have suffered without relief for years, then the roentgen-ray man discovers an unerupted molar, our good friend the dentist takes it out, and it is good-bye headache. Coming to the headache of nasal origin, it is impossible for the otolaryngologist to confine himself to nasal headache without taking into consideration the whole body. If we try to confine ourselves to the nose and throat alone, without consultation with the general practitioner—this is where team-work comes in—we are going to make a failure of the case. Even with an old infected antrum, for example, in those cases where we do clear up the antrum we find that the nervous system of that patient has got into such a condition that even after the antrum is taken care of the patient still has headache. I am glad Dr. Fairfax did read this paper, because we might learn something new, and I am sure every general practitioner and every otolaryngologist is anxious to learn anything that may assist him in relieving this condition.

Dr. H. R. Fairfax (closing): There is not much to add. It is a large subject, there is much to learn, but I do not know that I can tell you anything new. Dr. Lynch this morning brought out the point that in transilluminating the sinuses in children you can be very often mistaken because the picture does not show up as it does in the adult, and when in doubt it is much better to take an roentgen-ray. This I think is an important thing.

PLASTIC SURGERY OF THE ORBIT.*

A. G. WILDE, M. D.,

JACKSON, MISS.

While devoted primarily to ophthalmology, I became interested in plastic work in the Philippines during 1914, where in conjunction with eye surgery I was called upon to repair faces either after injury or after the ravages of disease. At that time, plastic surgery, as we understand it today, scarcely existed, and as I look back at those faltering attempts, it is evident many of our results were crude. However, they excited considerable interest at the time, and gave some intimation of plastic possibilities.

Prior to that time there had not been a great demand for plastic surgery, and little was attempted beyond the repair of recent injuries, or correcting certain congenital defects, usually by ingenious transfers of skin. The World War, with its flood of lacerated wounds, forced more attention to be paid this branch, and during the four years of that traumatic epidemic, various plastic procedures were developed, that by giving functional or cosmetic improvement, served to restore the usefulness of the individual to both himself and society.

Our intensive industrialism, and ever increasing demands for greater speed in transportation, afford most of the present occasions for plastic repair. Lesions of the face are especially liable in automobile accidents, and the motorcycle and even aeroplane are contributing their quotas. As the inescapable human element in the operation of machines will always prove of variable efficiency, a certain percentage of accidents is to be anticipated.

The orbital region is so frequently the site of injury, and at the same time so conspicuous, that occasions for its repair

*Read before the Section of Surgery at the Sixty-third Annual Session of the Mississippi State Medial Association, Vicksburg, May 13, 1930.

are always liable. As it may also develop various neoplasms, such as cysts, angiomata, or various types of malignancies, defects remaining after removal afford opportunities for the exercise of plastic skill. The line of transition from one type of epithelium to anther is always a point of predilection for malignant changes, and they are not uncommon at or around the lid margins. As the average life expectancy is lengthening, a greater percentage of people reach the cancerous age, and hence its incidence will probably increase. Moreover, our people are devoting more thought, time and means to personal appearance than ever in their history, and as they are becoming acquainted with the possibilities of plastic surgery, it seems reasonable to believe this will be a field of increasing demand and importance.

When contemplating any surgical attempt, plastic or otherwise, two questions should be considered: first, is operation really indicated, i. e., would the welfare or happiness of the patient be jeoparized if surgery was omitted; and, second, will the methods employed be such as to safegaurd both the patient's welfare, and the surgeon's professional standing? Unless both can be answered in the affirmative, operation should be avoided.

As in every operative procedure there are so many factors over which the surgeon has little or no control, perfect results either plastic or functional should never be guaranteed. All that the surgeon can proffer is that he is not only equipped to exercise technical skill, but to throw around his patient all customary safeguards, and barring the unexpected and unavoidable, it is reasonable to anticipate a favorable outcome. More than this no one is warranted in promising.

A patient who constantly complains of a blemish that is of no consequence, and at the same time so insignificant as to pass almost unrecognized, is also unlikely to be satisfied with any plastic result however excellent. Such "entangling alliances" should therefore be carefully avoided. We rarely meet a woman who is perfectly content with the shape of her nose, and demands for its operative improvement can attain the proportions of an obsession. But unless its peculiarity amounts to actual disfigurement, it had better be left alone, as she is also liable to be even less pleased with any surgical outcome. Under no circumstances should major procedures be attempted in order to correct minor difficulties. If the result should be successful, little has been accomplished in comparison with the jeopardy in which both the patient and surgeon have been placed. In unsuccessful, embarassing or even serious results may come to both.

One of the most interesting features of plastic surgery is that no two cases are alike. While general principles are always applicable, it is unusual to employ identically the same procedure twice. Hence none should be attempted until ample preliminary study has reviewed the various possible methods of repair, and that one has been selected which seems most feasaable technically, and most likely to yield a satisfactory result.

Plastic cases are not emergencies. The time for doing them is entirely optional. Hence that environment and occasion should be chosen that seems to offer the best chances of success. If the condition is a recent lesion, repair should not be attempted until all evidences of infection have subsided. If the general health of the patient is good, resistance will be high, healing will be expedited and scar formation minimized.

Unless the lesion is relatively simple, multiple stages of repair are preferable. All scars become altered with time, although massage and physiotherapy decrease their adhesions and immobility. However, contractions are always to be anticipated, and they will alter in some respect the appearance of the recent correction. Especially is this true in the

neighborhood of the lower lid, where elevation of its margin must always be done in excess, otherwise the resulting contraction will produce a disfiguring ectropion that, if severe, can lead to drying and ulceration of the cornea.

In plastic surgery, anesthesia by nerve block is always to be preferred, or if that is not feasable, by tissue infiltration. The latter has the disadvantage of producing a local edema, that may interfere with good coaptation of the wound, and thus delay healing, or even increase scar formation. One per cent novocain is sufficient, and the rule-of-thumb method of adding one-half as many drops of 1:1000 adrenalin, as c.c. of the solution employed, makes a dilution of approximately 1:30,000, which is sufficient for the average case. For extensive repairs, especially in highly sensitive patients, the intravenous use of amytal, may be the future anesthetic of choice.

While the abundant blood supply of the face enables it to throw off considerable infection and materially assists healing, no aseptic precautions should be elided. The end sought being cosmetic perfection, every possible aid should be adopted to lessen the likelihood of unsightly scar formation. Where incisions can follow the Langer lines of tension or natural folds of the skin, the results are less noticeable. When made above the orbit, they can be placed in the brow, and their future conspicuousness be greatly lessened.

The skin surface is first cleaned well with soap and water, followed by vigorous rubbing with benzene or high test gasoline, to dissolve off fatty substances. Ether evaporates too rapidly for this purpose, and where patients have taken it before, they are liable to become panicky when it is used on the face. Real sterilization is done with 3 per cent iodine, or better 5 per cent picric acid in alcohol. If iodine is used, the surface must be absolutely dry, as in the presence of moisture its antiseptic action is greatly impaired. Also it must be allowed to quickly and completely evaporate, lest it produce a blister that may invite surface infection, and cause additional scar formation.

Whenever possible, defects of the face should be covered by the adjacent skin, as it is similar in color and texture to that replaced, will heal more rapidly, and gives a more natural appearance than when transferred from a distant portion. For the general orbital region, flaps from the temple are available, and the resulting scar is not so conspicuous as when taken from the forehead. The temple area has an abundant blood supply, and if a large transfer is desired, it can be cut to include the temporal artery. These pedicle flaps reach the area about the eyes, and can provide good cosmetic and functional results. The prime thing to avoid is any form of traction acting away from the lid edges, as it will later interfere with their proper closing. Moreover, if an artificial eye is to be worn, such contraction may make its retention impossible.

When desirous of covering large defects, and at the same time make no additional local scars, the method advocated by Ferris Smith may be used. A vertical band of skin is loosened on the upper arm, the raw surface joined together so as to form a tube, and left in position until it has acquired sufficient blood supply. The distal end is then detached and secured into the face or orbit, with the arm fixed in position by plaster until the transplant adhere. However, as this skin is thicker and generally lighter in color than the face, it is preferable to build up the orbital region with such tissue as is adjacent, and if necessary use the flap from the arm to cover secondary defects in some less conspicuous position. Flaps should not be taken from the anterior or lateral surfaces of the neck, as a disfiguring scar always remains, and its liability to keloid formation is very imminent.

Rough handling of tissues is to be carefully avoided, as it interferes with their

subsequent nutrition, increases the likelihood of failure, and produces excessive scarring. The pedicles of all flaps should be as large as possible to include the maximum blood supply. If there is any doubt as to its subsequent nourishment, the delayed transplant method should be adopted. Here the flap is turned up, and after all bleeding is stopped it is carefully sutured back into its bed. This augments the blood supply through the base, and at the same time assures nutrition of its tip. A week later it can be lifted and placed where desired. In all manipulations the skin should be grasped with instruments only on its under surface, in order to avoid later epithelial necrosis. Also it has been found to suffer less traumatism when cut by a thin sharp knife, than when sectioned by scissors. Incisions made obliqely to the skin surface offer no advantages over the ordinary method, as they are more difficult to coapt accurately with sutures, and produce as much subsequent scar.

The ability of grafted skin to adhere after transfer from another seems to obey the general rule of blood grouping in its compatibility. When taken from a member of the same group it is most apt to be successful. When from a non-compatible individual, it has little chance of growth. Naturally the base to which it is transferred must be healthy and dry.

When necessary to build up the site on which to later place a transplant, the transfer of loose fat is seldom satisfactory. It has been found to have little resistance to infection, it necroses readily, and will liquify and escape through whatever openings are available. Even should it remain, this fat eventually becomes converted into connective tissue, which later undergoes the regular scar contaction.

If it is necessary to fill out defects of soft tissues, and there is nothing available locally for transfer, *fascia lata* can be either packed into the cavity, or used as a single sheet as desired. It seldom necroses, and later undergoes very little shrinkage. For replacing losses of bony parts, sections of costal cartilage buried in subperiosteal pockets adhere immediately, and give excellent and permanent results. Implantations of decalcified bone, calf cartilage, celluloid, ivory, various metals, and other foreign substances are so seldom successful, as to constitute surgical curiosities.

The use of paraffin under the skin by any method is only mentioned to bestow upon it an unqualified condemnation. I know of no more difficult or disagreeable task than to attempt its removal after becoming diffused through the tissues, and the result is usually worse than the condition for which it was originally given. These unsatisfactory or even disastrous results of paraffin injections have been so frequently demonstrated, that anyone using it today is liable to suit for malpractice.

For cosmetic results, skin stitches on exposed areas should never be left at a tension, as around each there occurs a local necrosis that causes an excessive production of scar. For this reason it is better that the skin be undermined away from the incision, and brought together independently of the subjacent tissue, with the sutures tied so as to produce slight eversion of the cut edges. As a further precaution against tension, Ferris Smith uses strips of gauze fastened by collodion across the wound. These by their contraction will tend to further relieve the suture line.

Keloid formation is the constant menace to plastic or cosmetic results, and its incidence is greatly increased by tension plus mobility. Ample dissection of flaps used to cover defects will obviate the necessity of tension, and where the liability to movement is constant, plaster reenforced dressings may be used until the parts are well healed. The only treatment we have for keloids is one of prophylaxis—by the avoidance of tension on the edges of the incision, and prevention of movement of the healing area.

After the suture line is completed, all transplants and plastic repairs should be liberally covered with a bland sterile ointment, and as a further precaution the first layer of dressings should be paraffin gauze. This is non-adherent, and hence will not jeopardize the suture line when removed. Also, irrespective of the type or amount of exudate, it can soak through without drying, and be absorbed by the overlying dressing. This is then covered by cotton, and a bandage firmly applied. If the bandage is too loose, the transplant will either slip or become floated off by the serum or blood collected beneath. Also it is preferable to apply the bandage from the pedicle towards the distal end of the flap, as this tends to force out whatever accumulations may be present, and thus favor more rapid adhesion to its base. When greater immobility is desired, melted paraffin can be poured or painted on to any thickness desired, with fresh layers of bandage added while it is still soft. This fuses the entire covering into one reenforced dressing, that is clean, firm, comfortable, and easily removed.

Free transplants should be inspected on the third day. If this is delayed until the fifth or sixth, any exudate collected beneath may do considerable damage. If dressings are removed too soon, *i. e.*, before union has formed, the transplant may become moved sufficiently to destroy its adhesions, and necrosis may occur before more can be formed.

With pedicle flaps, dressings should be changed within twenty-four hours. Stitches should be partially removed on the third day and all be out by the fifth. If left in later, scarring may be increased. Care must be taken to insure that mattress sutures on which there is considerable tension, cause no local necrosis, by reenforcing them with a piece of rubber, or strips of celluloid, or by passing each through a large button that takes up the pressure on the skin. Any stitch showing an area of hyperemia should be immediately removed, and a penetrating antiseptic applied.

I am convinced that direct exposure to the sun or ultra-violet light, expedites repair of skin lesions. This may be due to either the local hyperemia produced, or the augmented general resistance of the individual. This exposure should be made at every change of dressings, beginning with ten minutes daily, and increasing in accordance with the patient's tolerance. When healing is sluggish under a bandage, such exposure and drying will often stimulate epithelial proliferation remarkably, especially of the denuded areas from which Thiersch grafts have been removed.

DISCUSSION.

Dr. L. W. Long (Jackson): I think we all appreciate the value of Dr. Wilde's paper. So far as I am able to find out, it is the advent of a new thing into the Medical Society of Mississippi. Dr. Wilde knows what he is talking about from the results he gets, and we can learn a great deal from him. Ordinarily, major surgery is what we classify in the hospital as quick surgery, sometimes emergency, and quite frequently not a matter of choice; it has to be done. Whereas plastic surgery is a matter of choice. You can select the time and method, and give it plenty of study beforehand, and can be prepared to do it as you want to. I think we could eliminiate quite a bit of need for p'astic work. In ordinary accidents where cases are brought into the hospital I have seen many sewed up with ordinary silkworm gut, with no attempt made to approximate the edges of the skin. I think we can eliminate a lot of that by using proper sutures. I feel that with chromic catgut you will get five times the amount of reaction around the suture that you will around plain silk. You will find a large proliferation of giant cells. With undyed black silk, if it is a clean case you need have no hesitancy in burying it. The question always is whether the operation is really indicated and whether the method is safe for the patient and the physician. That is not always considered in many instances; much unnecessary work is done; there are a great many quacks in the business, and as a consequence plastic surgery has a more or less black eye in many instances. I think the pinch graft to replace denuded areas has been more successful in my experience; it stands up well and will stand quite a lot of infection, whereas in my hands the others do not seem to do as well. Ultraviolet rays are of great aid on all plastic work, stimulating the epithelium, helping to cover the area in a short time. Where the lamp is used do not use too much, but where or-

dinary sunlight is used there is not so much chance of getting into trouble.

Dr. H. R. Fairfax (Brookhaven) I want to congratulate Dr. Wilde on this most excellent paper. He has covered the ground very well. There is one word of warning with regard to this keloid formation mentioned by Dr. Wilde. As an illustration, especially in the colored race, which is susceptible to keloids, I am reminded of a woman who had had her ears pierced for earrings, and she developed in each scar a keloid about the size of a pea. She did not like the look of them, and some enterprising young doctor attempted to improve the condition by cutting them off, so then she developed keloids about the size of hen's eggs.

Dr. F. H. Hagaman (Jackkson): My experience has been, so far as contraction of the scars is concerned, that the most satisfactory graft is the sliding graft. In most cases it has given me better results than any other type.

Dr. A. G. Wilde (closing) The question of suture material is of primary importance. Ordinarily for skin, I use either dermal or silk. Dermal is artificial silk, and is made with the idea of combining silk and silkworm gut. There is very little gross reaction around it. Of course there is microscopic reaction. If left in too long it will reach a point where you have excessive scar formation. The thing to avoid is traction upon the suture line; also, when the line of incision is brought together, eversion of the cut edge. When you finish you have a beautiful looking incision. After making a whole line of sutures very close together, I pull the skin up a bit with a little hook—no traction whatever. After about five days you should have a good clean scar. As to keloids, as Dr. Fairfax said, you take them off and they come back larger than ever. They are particularly liable to occur in the colored race. They have an overproduction of fibrous tissue. You seldom get them in the white race unless you have traction at the site of the incision. In removing keloids we have nothing that is specific. If you must remove it, make an incision entirely within the keloid, suture it up and it will not proliferate so much. Remove as much as you can, working entirely in this hypertrophic fibrous tissue, and re-suture. In this way you may get it down. You may, and you may not. Roentgen-ray and radium seem to have some effect on this keloid formation, but in general the results are not brilliant. Any way you treat them you have a long and arduous proposition before you.

THE EARLY DIAGNOSIS OF OPTIC ATROPHY.*

M. EARLE BROWN, M. D.,*

NEW ORLEANS.

It is our privilege this evening to study, that we may prevent the blindness which is the inevitable result of complete atrophy of the optic nerve, the delicate fibres of which, when once destroyed regenerate no more, its causes are legion and its treatment difficult. We must then consider each case of optic atrophy as potentially one of blindness. It is defined as a condition of paleness of the optic disc, with degeneration of the nerve fibres of the visual pathway, either by direct damage to the neurone or by proliferation of the supporting structures, with a permanent and progressive defect in the visual field, generally with no central scotoma, and with a lowered color acuity threshold[1] which is not commensurate with form (white).

There are two types of optic atrophy described in the texts, primary and secondary. The first type is often called gray, progressive, spinal, tabetic, and simple atrophy, it usually develops without previous inflammatory signs, and is due to direct damage to the neurone. Secondary atrophy results from previous inflammatory disease causing damage to the neurone.

A careful study of the fundus with the ophthalmoscope reveals the pathology concealed within, being a pathological field observed in the living eye. The presence of fibrous tissue and its arrangement, the changes in the blood vessels, the size and shape of the disc with changes in the nerve elements best seen with a red free screen determine the type of atrophy being studied. Syphilis plays the leading role as the etiological factor.[3]

Pallor of the optic disc is caused by the narrowing of the capillaries with subsequent emptiness, also by fibrous tissue over the disc and by degeneration of the nerve

*Read before the Orleans Parish Medical Society, May 26, 1930.

elements either by constriction or by proliferation of its supporting structures, however, pallor of the disc *per se* is not diagnostic of atrophy, as it is observed in cases of tubercule of the nerve head, also by deposits of calcareous salts in the disc, and by hyaline bodies in the nerve head.

Visual fields are of the concentric contracted type (tubular fields) with 90 per cent visual loss or more, and less frequently with re-entering angles, colors being affected first, red is lost before the others. Generally there are no central scotomas, excepting in those cases produced by selective poisons, and in secondary atrophy as a result of disease of the retina or choroid and where toxic substances are in the blood stream. Central scotomas produced by central cheroiditis, or retinitis show a change in the relative size of objects (retinal metamorphopsia) blue being the first color to disappear.

Field studies although of paramount importance, when charting the percentage of damage to the neurone or its supporting structures, are not diagnostic of optic atrophy unless the destruction is permanent. Hyperplastic sphenoiditis[2] also presents concentrically contracted fields, tubular in character with as much as 90 per cent visual loss; however, the colors are commensurate with form, therefore, green having the shortest wave length is often completely lost, unlike the fields of atrophy, the changes are not permanent.

As the visual fields are generally studied after the diagnosis has been established by noting the opthalmoscopic changes in the fundus it becames a valuable guide in determining the progress of the disease. As central vision fails for colors, and especially is this true for red, before it fails for form (white) the authors method of using the color acuity test offers the only early diagnostic sign of invasion of the neuro-epithelium of the visual pathway.

As a red object of 3 mm. in diameter, a green object of 5 mm. and a blue one of 7 mm. must be recognized at 6 meters to constitute normal vision,[4] it is obvious that a lowered threshold for red, *e. g.*, 50 per cent or more reduction being diagnostic of an invasion of the ocular neuro-epithelium, cannot but suggest beginning atrophy.

As many of the sufferers from this disease consult opthalmologists after it has progressed beyond the reach of therapy when the visual loss has been so extensive that the perception of light only remains, it behooves us to pause, briefly if you may, in an effort to assist others. As the prolonged ingestion of arsenic is known to produce atrophy of the optic nerve by direct action upon the neurone, and as syphilis being the greatest single etiological factor in the production of the disease, as many clinicians employ the arsenicals in the treatment of syphilis, it is obvious that the atrophies follow.

It is now possible to determine definitely whether the neuro-epithelium of the visual pathway is involved and if so it is a most positive contraindication to the administration of the arsenicals.

BIBLIOGRAPHY.

1. Brown, M. Earle: Color acuity: its importance in the early diagnosis of the diseases of the conducting paths and centers, and diseases of the nuero-epithelium. New Orleans Med. and Surg. Jour., 78: 671-676, 1926.

2. Brown, M. Earle: Ocular manifestations of diseases of the paranasal sinuses. Radiol., 9:418-431, 1927.

3. Wright, R. E.: Optic atrophy. Brit. Med. Jour., 806-808, 1923.

4. Brown, M. Earle: Indications for surgical procedure in sphenoiditis from ophthalmological studies. Read before the Louisiana State Med. Soc., New Orleans Meeting, April 27, 1927.

DISCUSSIONS.

Dr. Henry Daspit (New Orleans): To those of us doing organic neurology, the question of optic atrophy is a matter of immense importance. I am far from satisfied personally as to those cases who should be given arsenicals and those cases where intravenous arsenicals are contraindicated. Dr. Brown's method of examination as far as the use of tryparsamid is concerned is certainly very suggestive of the desirability of avoiding the drug in the type of case where degeneration of the "neuro-epithelium" is established. Tryparsamid holds far more danger to the optic nerve than any other arsenical. In early experimental work with tryparsamid we gave extremely large doses and had little involvement of the optic nerve. Most of the unfortunate results have occurred in individuals who have been passed on by capable opthalmologists as showing normal discs and fields.

Repeated rechecks of fields and discs are needed during treatment. We cannot be too cautious with arsenicals; they should be avoided in instances of obvious optic nerve degeneration. The fact that arsenic does produce atrophy is without doubt. Nevertheless, we must remember that primary atrophies occur in many neuro-syphilitics who have never received arsenic.

If there are any opthalmologists present who can help us out of the difficulty as to when arsenicals are, or are not, to be administered I would enjoy hearing from them.

Dr. M. Earle Brown (closing): An opthalmoscopic study of the fundii does not constitute a complete ocular examination, nor does the recognition of Snellen's test type letters at 20 feet.

One must be able to determine the presence of neuro-epithelial involvement in the visual pathway before administering arsenicals.

CORNEAL ULCERS.*

W. LAUCH HUGHES, M. D.,

JACKSON, MISS.

Ulceration of the cornea is one of the most common eye affections, and due to its frequency and the grave consequencies following in untreated cases it ranks among the first in importance. Even in the cases that are treated early and well we often get very serious impairment of vision.

Before we ean have an ulcer of the cornea two conditions must be met. First we must have a break in the continuity of the epithelial layer of the cornea, and second, we must have an infection of the broken surface.

From an etiological standpoint corneal ulcers may come from either an internal or external cause. By far the greater number come from an ectogenous cause and this route will have our special attention. Bacteriologically we find many different organisms, those harbored in the conjunctiva usually being present, but often a culture from the ulcer will be negative for any organism at all.

For practical purposes we shall discuss corneal ulcers as those arising from primary and secondary causes.

1.—Primary.

(a) The most common ulcer seen in general practice is that due to traumatism. This includes those due to wounds from foreign bodies or to retained foreign bodies such as cinders, sand, steel dust, rust, chemical burns, irritation from growths in the lids, ingrowing lashes, and others too numerous to mention.

Here I would like to mention, particularly, the damage that can be caused by a cinder, small piece of steel, or other small foreign bodies becoming embedded in the cornea and allowed to remain for two or three days. These cases are seen very frequently by those of you who do industrial work and as you know, due to their work, they put off seeing a doctor as long as possible. When they do come in we find the foreign body well embedded with a surrounding area of ulceration and an early iritis. This means that the scar left by the ulcer will cause a certain amount of visual defect and that the patient will be disabled from three or four days to several weeks whereas he should have lost only a few minutes if he had consulted a doctor at once.

(b) Next in frequency of the primary ulcers is the small marginal ulcer found in the aged, in the debilitated, and in the marasmic infant. The exact cause of these ulcers is unknown but it is thought to be due to an accumulation of uric acid salts in the body. However, we do know that in many cases a recurrence can be prevented by a proper diet.

There are other types of primary ulcers but due to their rarity we shall not discuss them here.

2.—Secondary Ulcers.

(a) Probably the most common of the secondary ulcers is that seen accompanying catarrhal conjuctivitis. These usually occur along the margin of the cornea but in cases of severe conjunctivitis may be central. As a rule these ulcers are mild and the prognosis is good.

* Read before the General Session at the Sixty-third Annual Session of the Mississippi State Medical Association, Vicksburg, May 14, 1930.

(b) The ulcer accompaning gonorrheal conjunctivitis is the one most dreaded by the opthalmologist. It is always central and leaves more or less permanent visual defect if the eye itself is not lost. Thanks to the work of preventative medicine these ulcers are raely seen today.

(c) Secondary ulcers less frequently seen are the pneumococcic, the diphtheritic, and those accompanying the rarer infections of the lids. The pneumococcic or serpiginous ulcer when seen is very difficult to handle and the prognosis is always doubtful due to its intractability and slow course.

In every case of corneal ulcer our prognosis to the patient should be guarded. In the most favorable of cases the ulcer always leaves a scar with a visual defect depending upon its size and location. The end result may be a very small scar out of the field of vision or on the other hand we may get a perforation of the cornea with a loss of the eye. In the early cases under proper treatment we will usually have very little permanent damage.

As a rule these ulcers begin in the outermost layers of the cornea and progress inward. The first evidence of an ulcer is a clouding of the corneal substance with a loss of lustre and diminished corneal reflex. Following this we get an absorption of the tissue involved and a depression of the area. We are usually able to distinguish a definite roughness of the surface with a dirty gray color. All doubt as to whether there is a break in the surface can be removed by instilling a drop of 1 per cent mercurochrome into the eye. After washing off the excess, if there is a break, there will be a definite staining of the area. Due to nature's effort to combat the infection one of the first signs is an injection of the ciliary or vessels immediately surrounding the cornea. This congestion soon spreads more or less to the entire conjunctiva. The patient complains of photophobia or sensitiveness to light, of a roughness or scratching of the eye when he closes the lids, and usually says there is something under the upper lid. If the ulcer is of several days duration he complains of severe temporal headaches over the affected side, these being more pronounced at night. There is a corresponding loss of vision but this does not concern the patient so much since due to the photophobia he keeps his eye closed or covered as much as possible.

As to treatment, first remove the exciting cause, where apparent. Here let me say a word on the removal of foreign bodies embedded in the cornea. It is not only necessary to remove the body itself but any rust or debris left by it. In removing these remember that the cornea is probably the most sensitive tissue in the body and must be handled accordingly. Don't try to remove a cinder without first desensitizing. This can be done easily and rapidly by instilling two or three drops of 4 per cent cocaine into the eye. After four or five minutes the foreign body can be removed and any debris scraped away without any pain whatever.

After the cause has been removed the classical treatment for an ulcer of the cornea is atropine and bandage. We usually use a 1 per cent solution. Atropine puts the eye at rest and the bandage prevents irritation from the lids and excludes the light. In the use of atropine two warnings are in order, namely, be sure of your diagnosis as the clouding of the cornea and loss of corneal reflex may be due to a glaucoma and atropine might mean the loss of an eye. Second, atropine must be used with great care in the aged as it is very easy in these cases to set up a secondary glaucoma. Along with the above treatment thorough elimination must be had. Personally, I like to use a brisk saline repeated about every third day. I will not go further into the treatment of these cases for if the patient does not respond to this treatment within 24 hours he should be seen by a competent opthalmologist.

I have tried to avoid as much detail as possible in this paper and said very little about treatment as my object has been to

aid in the prevention and early recognition of these cases so that they may have early and proper treatment and thus diminish the amount of permanent visual defect. If this paper helps to do this in just one case it will have served its purpose.

DISCUSSION.

Dr. A. G. Wilde (Jackson): The question of ulcer of the cornea which Dr. Hughes has chosen is important, not only on account of its high incidence, but on account of its seriousness. When we see an irritated eye it is necessary to know whether or not an ulcer is there. There are three conditions localized in the cornea. The first, ulceration in which there is a grayish clouding of the cornea, but no actual loss of the surface—that is merely infiltration. Next is an abrasion of the cornea, actual loss of substance, no infiltration, and perfectly clear. The ulcer is a combination of the two, loss of substance plus an infiltration. In treatment there are certain things to be borne in mind. The tension should be tested with the fingers before mydriatics are instilled. The various antiseptics are of course not applicable to the cornea, because the tissue is too readily destroyed. A very small applicator with phenol can be used, but the zone of the application is limited. You will sometimes find pus in the anterior chamber behind the cornea. That does not mean that the iris is affected. As soon as the external irritation is relieved it will be absorbed and you will have no further trouble. There is danger in applying any kind of mydriatic in ulcers that are broad and horizontal. It is much more dangerous and much more painful than when they are deep. A perforating ulcer is not so serious.

Dr. L. S. Goudet (Natchez): I think this paper should be pretty thoroughly discussed. It is of great importance to the ophthalmologist as well as to the general practitioner. We have two types of chronic ulcer that come before the eye man continually; the phlyctenular type, which we see so often in small children, the fundamental cause of which is malnutrition; then the other type seen in the aged, usually a pneumococcic infection. The ulcer in the aged not only shows a pneumococcic infection to contend with, but we have to go further and look to the general condition of the patient. That type is usually found in poorer people, not able to have proper diet; we generally find also there is a focus of infection. My experience has been that in 95 per cent of these cases, if you open the mouth you will find a dental condition that is, or may be, the causative factor. I do a good deal of clinical work in the city hospital at Natchez. The simple treatment of these cases does not seem to get us anywhere. We usually have to send them to the dentist, place them on a diet, and many times have to hospitalize them for weeks at a time before we get the eye cleared up. In the phlyctenular ulcer of children the treatment of the ulcer alone is not so good, although of course it does some good, but we have to seek for the infection. Dr. Hughes brought out a point upon which I have had a number of discussions, as to whether we should bandage the eye. We still have differences of opinion on these conditions. Some men think we should not. My experience has been that after we clear up an eye with an ulcerative condition, it should be bandaged, because every time the patient opens and closes his eye he is rubbing the surface and making the condition worse. I have found that after filling the conjunctival cavity with 1/3000 solution bichlorid ointment, we get results. In conditions of the conjunctiva where there is no corneal ulcer, I believe in leaving the eye open and treating it many times. But in ulcer I believe it should be bandaged. Many people object to that—they do not like to wear a bandage, and I think such cases should be put in an institution.

Dr. W. L. Little (Wesson): I notice that Dr. Hughes mentioned the use of cocain. I do not use cocain. I am a general practitioner, and I have not kept cocain in the office for years. I use novocain and then a modified application of silver. I want to know if he finds cocain better than morphin.

Dr. George P. Sims (Gulfport): In regard to the treatment of infected or pneumococcic ulcer. It is highly essential and important that whatever is used, carbolic acid or anything else, should be brought in contact with the infected tissue. That is the essential thing. I am in the habit of doing that— curetting the ulcer with a small sharp curet and they applying a boric acid solution. Then with a probe, the sort used for dilating the tear duct, I get up to where the infected material is. I mention carbolic acid because it is said to be nondestructive to healthy tissue. I always get good results.

Dr. Lauch Hughes (closing): I certainly appreciate this very free discussion. In answer to Dr. Little's question as to why I advocate the use of cocain rather than novocain. It infiltrates the mucous membrane more rapidly. I have not used novocain in this condition, but in trying to use it otherwise I have found it is not so thorough. I want to have the cornea absolutely dead, or the patient will flinch. The use of cauterization in these ulcers I do not think much of. If you get your ulcer clean I find they generally clear up without cauterization. When I do use it I use just a little iodine applicator—so far I have not had occasion to use any other. So far as bandaging the eye is concerned, I do not think you can make an absolute rule. If you have any gonorrheal infection and

bandage it, you will bandage up that pus and secretion, which is not going to help, and if you leave it open it will continue the irritation. You have to make your rule according to the patient's condition and progress. If you can get rid of the secretion, keep it bandaged and all is well.

NEURALGIA; TIC DOULOUREUX; TREATMENT BY INJECTION OF QUININ UREA.*

W. A. LURIE, M. D.,

NEW ORLEANS.

It is my apparent success with the injection of quinin urea, in a small series of cases which have come under my treatment in the past year, that prompts me to make this report at this time. It may be that a larger series of cases or a longer lapse of time may prove my findings incorrect. However, the relief experienced by these few patients and the simple method employed make me feel that the relief which can be so easily had, should not be denied the numbers who suffer from these conditions.

Neuralgia is a term which is rather loosely applied to include all types of pain more particularly involving the various areas about the head, most often the jaws. The pain is not constant in character, and varies in severity from a mild twinge or ache to a more intense seizure, with increase in spasm or twitch, and greater pain. By greater pain is meant that the pain may be both more severe and longer in duration, and more frequent in its onset. This latter type of case may merit the classification of a true tic douloureux. These cases perhaps develop as a result of the continuation of some undiscovered lesion of apparently minor local significence, the presence of which initiated the symptoms. Because of the uncertainly of the origin of these symptoms and the frequent oral location of some pathology, many teeth are sacrificed and many needless other operations are performed, in the area of the distribution of the fifth cranial nerve. The typical pain classified as neuralgia involves the areas of distribution of the sensory branches of this nerve. Usually only one set of nerves or one branch on one side is affected. This is not absolute, though exceptions are rather rare.

The patient with a severe neuralgia, approaching the major type, usually presents a rather definite history of onset of symptoms, and the subsequent train of their increasing severity and constancy in onset. A sudden severe pain or a slight muscle twitch in a definite area will have been noticed always to follow the same irritant or to occur quite regularly after some often normal necessary act. These painful attacks have been known to follow the mastication of food, to recur at a certain period of the day, or at a definite time after eating. This has often led to the removal of teeth on the affected side, for the relief of the pain, even though such teeth present no cavities or abnormalities of any character; a practice which cannot be too severely condemned. Such patients are most often made worse instead of better, for the protecting element of the teeth over the tissue area involved is lost, unless the protection of a denture is immediately had. It is often the topical irritation which causes a subsequent increase of the pain incident. Another fact, which is lost sight of after the wholesale extraction of teeth for this condition, is that the loss of teeth permits of an over-action and over-contraction of the masseter muscles. The inequality of the action of this pair of muscles, often in itself may be a causative factor of facial pains and neuralgia. In such cases the early symptoms soon become more pronounced and severe, and the interval between the seizures materially shortened. Even the length of time of the attack may be increased.

The typical neuralgic seizure cannot be easily described because of the great variation in the type, degree and location of symptoms. However, there is a constancy

*Read before the Orleans Parish Medical Society, May 26, 1930.

in them to this degree; a sudden pain or muscle-twitching in a given area, which lasts a definite time, regularly; and which is followed by a lesser or greater degree of soreness over the same area after the spasm or pain has subsided. The whole attack may last but a few seconds, or it has been known to last for hours. In this series of cases the acutely painful seizures lasted as long as eight minutes while soreness was experienced almost constantly. The seizures vary from occasional to daily or hourly or even oftener. The continuation of these severe symptoms, in the face of treatment for their relief, merits the classification of the case one of a major neuralgia or tic douloureux. Most of these patients are over 40 years of age, although cases do develop in younger people.

The treatment of neuralgias of both the minor and major type is rather unsatisfactory as is indicated by the long list of medicines used for this purpose. The surgery so often resorted to is not without its dangers, and a procedure which is not to be undertaken without a serious weighing of the benefits which results for the risk taken. For this reason, less dangerous methods of treatment, endeavoring to destroy or lessen the sensitivity of the sensory nerve trunk have been undertaken. Of the most common procedures, that of the injection of 95 per cent alcohol into the nerve trunk and even into the Gasserian ganglion has attained prominence. This method is not without its dangers and its train of disastrous sequelae. Chief among these is the fact of a sensory paralysis following the injection, which may be distributed over the area of the branches of the nerve injected or over the entire area controlled from the ganglion. This loss of sensation adds to the dangers. The insensibility of the eye ball is a potent danger. A foreign body may become lodged in the eye without sensation, thus encouraging infection. Such an infection is the more severe because of the trophic disturbance which result from the injection. Such accidents often end in the loss of an eye.

The pathology underlying these conditions has not been found to be constant. However, all treatment has been directed to the destruction of the sensory nerve fibres to the area, or to stimulate fibrosis. It was this thought which prompted me to use quinin urea in these conditions, to encourage a non-pathological fibrosis. It has been my observation that in making local injections for oral operations about this area, that local anesthetics injected into these areas only had a very transient effect. However, this was not true of quinin urea. Quinin urea in 1 per cent sterile solution by means of a long fine needle was therefore first injected into the space just back of the malar process. The injection was done per ora using the malar process and border of the alveolar process as landmarks, and injecting upward, backward and inward. The injection is made slowly and the point of the needle moved frequently. This allows a greater distribution of the solution over a larger area, and lessens the possibility of depositing any quantity of the solution into a vessel in this very vascular area. It has been my experience that following the first injection there will be considerable swelling which will appear almost immediately. However the patient will experience a sense of relief from pain. While this relief is comparative at first, it will be found to become absolute, and to last longer after each subsequent injection. One must allow time for the desired fibrosis to take place. This action may have this happy effect on the perineural tissues, without the destructive irritating effects of the alcohol injections. In making the injection, the attempt is made to reach the area of the branch of the nerve affected. If the symptoms indicate an affection of the mandibular division the injection is made more in a backward direction, while if ocular or in the maxilla, more upward and inward.

The anesthesia following these injections is only slight and such as follow ordinary oral operations and the blocking of the nerve to the area. There is no disturbance of the senses of taste or smell. The patient

is not required to discontinue his work. Often after the first injection he may be found markedly improved. It will be early noted the seizures are less frequent and less severe than before the injections. These results are best illustrated by recounting several histories.

CASE REPORTS.

Case 1. Mrs. A. B. was referred because of pain of paroxysmal character which had existed for more than two years, and which was growing gradually more severe in spite of all the treatment that had been given. For the relief of this condition, this patient had submitted to the removal of all her teeth on the left side in both jaws. The pain in this case was referred more particularly to the lower jaw, although after the onset of a seizure, the soreness was also referred to the maxilla as well as to the mastoid areas. This patient had lost much weight because of loss of sleep and inability to eat, for mastication would bring on a seizure. This patient would have from four to six attacks in 24 hours lasting about two minutes followed by about a half hour period of sorness. In a period of ten weeks, this patient received six injections, with decrease in pain and increase in rest intervals between each injection. There has been no pain since the last injection, which was given in last November. Up to this time the patient reports herself well.

Case 2. Mr. C. C. was referred to me last November because of a left sided neuralgic pain with muscle spasm, followed by soreness. Seizures would come on once daily, about 7 P. M. and were characterized by about two minutes of sharp agonizing pain, centralized under middle of zygomatic process, followed by several hours of pain in the left eye and over an area described as covering that of all the upper molars on that side. There was a constant soreness of the entire left side of the face and head. Examination revealed a tender spot in the mouth in the position from which the molars were extracted. There were no pathological changes noted on the dental roentgenogram of the area. Local applications were made and general treatment administered with only very temporary relief until January when the first injection of 2 c.c. of a 1 per cent solution of quinin urea was made per ora into the area previously described. There was immediate and marked swelling of the left side of the face, with relief of pain. This patient received four injections over a period of seven weeks, and now has been free from pain since the last injection early in March. This patient has also gained in weight, having previously been losing continuously.

Case 3. Another case, still under treatment should be mentioned. This patient at present is improved, but not yet sufficiently so to be classified among relieved cases that bear reporting. This patient's seizures were of the most severe I have ever seen. After the first outcry of pain, a muscle twitching of the corner of the mouth would begin, and be followed by clonic contractions of all the muscles of the face, with final drawing of the patients head sharply to the affected side. These attacks would come hourly, day and night and last about eight minutes. An attack could be brought on by any contact within the mouth on the affected side. In the past month this patient has had nine injections, the interval of injection being increased as relief was experienced. The seizures were noted to be less after the first injection, and at last reports there were several days of complete relief noted between injection dates. There was an early reduction in the daily number of seizures to three in 24 hours and these lasting but two minutes.

CONCLUSIONS.

In conclusion I want to say that I believe that the results I have observed in this short series of cases warrant this report at this time so that a greater number of cases can be brought under observation. The injection of quinin urea in the treatment of neuralgia appears to be a safe procedure, and one giving promise of happy results without the dangers of the use of more toxic and destructive solutions or methods. This form of treatment need not require operating room preparation nor hospitalization. The injections are made without previous anesthesia and do not destroy the senses of taste or smell or sensation to the degree of dangerous possible sequelae.

DISCUSSION.

Dr. Z. T. Young (New Orleans): I want to congratulate Dr. Lurie on this most comprehensive discourse as well as express my profound appreciation for the privilege of observing the three cases cited. While the series of patients considered is too limited to draw any definite conclusions, this particular treatment, quinine-urea injections per ora, appears to offer at least the prospect of a comparatively safe mode of attack in this distressing condition. It sounds a new note in an age-old disease which continues to sorely harass humanity and may be the rational harbinger of hope for many sufferers who can find solace and beguiling security only when under the influence of the delusive poppy.

Among numerous methods of treatment employed in trigeminal neuralgia, it seems that alcohol injections have been most favored. In view of this, it is rather remarkable how this method has been discussed and cussed, principally the latter. The distressing and dangerous sequaelae ocular manifestations of all these unfortunate patients have been laid directly at the door of alcohol injection. And not without good and sufficient reason, I dare say.

It is needless to deny that these very eye symptoms are gigantic pathological problems in themselves; of frequent occurrence, often defying all available methods of therapeutic combat. Indeed, it might not be altogether amiss to call your attention to the responsibility of the opthalmologist in those too numerous cases whose eyes become involved; either as a result, shall we say, of the disease itself or of the alcohol injection, which latter is almost always blamed.

Be that as it may, eye pathology supervenes weeks, often months, subsequent to the apparent cure of the neuralgia by alcohol injection. Suddenly as a cloud from blue heaven the eye becomes involved, and thereby hangs a tale of much woe for the victim and the unwary eye physician concerned.

The eye is irritated very little despite the gravity of the corneal condition. Ciliary injection is present, but the eye does not lacrymate, and the patient states he has no pain. These two symptoms indicate beyond a doubt paresis of the trigeminus. The entire region supplied by the first branch of this nerve is anaesthetic.

The picture presented by the cornea itself is quite peculiar; its center is dull, opaque and denuded of epithelium far toward the periphery, leaving only a narrow strip at the margin which is clear and covered with epithelium. The floor of the large defect is cloudy.

Thus we observe that in peratitis neuroparalytica the center of the cornea first becomes dull, then the epithelium begins to be cast off; the cloudiness increases, the floor of the said loss of substance becomes more or less gray and may finally become purlent. The course is extremely slow, it is to be noted. In less severe cases, the corneal epithelium may remain in place, lusterless and dry. When it has once been cast off ulcerations develop from secondary infection, which at least leave opacities, but usually go on to perforation of cornea, prolapse of the iris, with serious impairment, most often complete loss of sight—And this in spite of all known methods of treatment.

Dr. Lurie has brought out several points which, to my mind, suggest the vast superiority of quinine-urea injections; viz:—

(1) The small quantity of quinine-urea required—2-4 cc. of a non-toxic substance.

(2) It is an office procedure, not requiring anaesthesia of the area injected.

(3) No after-effects—either shock or otherwise. Does not require 2 days' hospital confinement and does not produce either anaesthesia or paralysis of the parts 3-6 months thereafter.

(4) Complete absence of eye pathology—as described above—at least in that patient of his under observation 6 months.

Dr. Lurie (Closing): I just want to make one remark to the effcet that in all these cases examination was made to ascertain whether any local source of pain existed, and if any was found, the patient was given the opportunity to have that corrected before injections were made.

REVIEWS

OUR PRESENT KNOWLEDGE OF ACUTE ANTERIOR POLIOMYELITIS: A REVIEW.

ROBERT A. STRONG, M. D.,*

NEW ORLEANS.

We have again come around to that part of the calendar year when the incidence of epidemic poliomyelitis reaches its annual peak. There is nothing with which we have to deal in the practice of medicine that is so disheartening or saddening as to see a perfectly normal child almost hopelessly crippled for life by this disease. Small wonder that it has been a problem which has attracted the attention of many of our outstanding investigators, and while it is true that as yet there is no specific treatment which measures up to what we think it should, the progress which has been made is altogether encouraging.

Doubtless greater progress would have been made towards a solution of this perplexing problem if it were not for the fortunate fact that epidemic poliomyelitis is a disease of comparatively low incidence.

*From the Department of Pediatrics, School of Medicine, Tulane University of Louisiana.

The material for study has been consequently small, and it has been difficult to determine easily the efficacy of the several protective measures which have been suggested in recent years.

ETIOLOGY.

Most of our worthwhile knowledge dates from the epidemics of 1907 and 1908, which were high in morbidity and mortality but proportionately fruitful in information. It will be recalled that it was in 1909 that Landsteiner and Popper[1] discovered that poliomyelitis could be communicated to monkeys by the intraperitoneal inoculation with a suspension of human poliomyelitic nervous tissue. Soon after, Flexner and Lewis[2] showed that the disease could be transmitted indefinitely from animal to animal. This gave us our first evidence that poliomyelitis was infectious and there could be no other conclusion than that the etiologic factor is a living organism that multiplies in the tissue. Microscopic examination of poliomyelitic tissues failed to reveal any visible microörganisms. It was then that the conclusion was reached that it was an organism, either beyond the range of the microscope or that it was of such a character, that it would not take a stain. It soon became known, however, that the virus would pass through Berkefeld filters.

The next step in the effort to determine its etiology was when Flexner and Noguchi[3] succeeded in growing a minute anaërobic globoid body from poliomyelitic tissue. Later they were successful in recovering these bodies after passage through monkeys. These cultivation experiments were repeated by Smith[4] and Amoss[5] found small bodies morphologically identical with the Flexner-Noguchi organism. Later, however, Amoss[6] failed to discover any immunological relation between the globoid bodies and the filtrable virus. In any event, these studies have failed to be helpful in the control of the disease.

Several investigators endeavored to associate a strain of streptococci with poliomyelitis. Conspicuous among them were Rosenow[7], Nuzum[8] and Mathers[9]. In spite of insistence to the contrary Bull[10] has shown that none of the streptococci are capable of producing experimental poliomyelitis. Smillie[11] expressed the belief that the streptococcus could not be implicated in the pathology of the disease, and that it was either a frequent contaminating organism or a secondary invader. Amoss and Eberson[12] later found that the serum which had been developed by Rosenow and by Nuzum and his co-workers from the strain of streptococci suspected had neutralizing powers neither *in vitro* or *in vivo* or any therapeutic property in monkeys.

Notwithstanding these contradictory results, interest was awakened in the use of the streptococci serum for the prevention and treatment of poliomyelitis So Long, Olitsky and Stewart[13] again studied the cultivation of poliomyelitic tissues to determine, if possible, the source of the streptococci which had been suspected of being the causitive factor. Their investigation corroborated the conclusion that they were nothing other than agonal invaders.

In rebuttal of these findings Rosenow[14] has again insisted that his first impressions are correct. For the present, therefore, the conflict of opposed opinion concerning the streptococci as a cause of poliomyelitis leaves the question unsettled. In the meantime, the Council on Pharmacy and Chemistry[15] has decided to refuse to accept any poliomyelitis antistreptococcus serum until more evidence of its usefulness becomes available.

DIAGNOSIS.

Recent studies have indicated that the only truly effective treatment for poliomyelitis is convalescent serum. In order to be effective, however, it positively must be given in the preparalytic stage of the disease. This means that it must be given during the first five days. The early detection of poliomyelitis is absolutely necessary in order to accomplish anything with convalescent serum. In sporadic cases or in the early days of an epidemic, the diagnosis of

the disease is by no means simple. At this season of the year, however, every physician should be on the alert to detect symptoms which are usually typical in the first few days of an impending poliomyelitis. The symptomatology has been described in many excellent articles in text-books, but in no place has it been outlined better than in a communication of Aycock and Luther[16] who reported their observations in 106 cases in the Massachusetts Epidemic in 1927.

They summarized the symptoms as follows:

"The child seems prostrated to a greater degree than the temperature, which is usually under 102°F., would indicate. The face is flushed, the expression is anxious, and there is frequently pallor about the nose and mouth. The throat is mildly infected, but not enough in itself to account for the child's condition. The pulse is usually rapid, out of proportion to the temperature. The rest of the physical examination is negative, except for that portion which deals with the nervous system. There is frequently a rather coarse tremor when the child moves, which may be very striking. There is a distinct rigidity of the neck; however, this is not as marked as that usually seen in meningitis. The patient tilts the head on the neck but does not bend the neck on the shoulders. As a result, the head can be brought about half way forward, when resistance is encountered, and the child complains of pain. More constant and more characteristic than the stiffness of the neck is a stiffness of the spine. This is best brought out by having the patient sit up in bed and try to bend the head down onto the knees. The average child ill with other infections is very flexible and has no difficulty in doing this. If these patients bend forward at all, it is from the hips, with the spine held rigidly, Many of them cannot assume a comfortable sitting position without propping themselves up on their arms. Anterior flexion of the spine often causes a drawing pain in the lumbar region. Kernig's sign is not usually marked at this state, but the deep reflexes are frequently hyperactive rather than diminished, as they are later. A cerebral tache is almost always present, not infrequently becoming a purplish, irregular blotchy line a half inch or more in width. It is the presence of these signs and symptoms which justifies a probable diagnosis of anterior poliomyelitis and calls for a final step in the diagnosis.

The next step is the exxamination of the spinal fluid. The fluid is usually under moderately increased pressure (from 150 to 200 mm. of water). Misroscopically, the fluid appears to be clear, but when viewe by transmitted light, it presents a faint haziness which has been described by Zingher as a "ground glass" appearance. There is an increase in cells, usually between 50 and 250, but occasionally as high as 700 to 800, or as low as 20. These cells may early be largely polymorphonuclear, but later are lymphocytes. There is an increase in globulin."

TREATMENT.

As has been previously suggested, the only treatment which approaches a specific is in the use of serum obtained from patients who have had the disease. There have been a number of epidemics in which it has been used from which conclusions can be drawn as to its value. In 1927 Aycock and Luther used it in the Massachusetts Epidemic in 106 patients during the preparalytic stage, and only one of these patients developed fatal paralysis.

Of the remainder, 64 per cent developed paralysis, but the average total paralysis, as well as the severe grades of paralysis, were much lower than in untreated, nonfatal cases elsewhere in Massachusetts during the same period.

In the following year it was used in an outbreak in Baltimore under the direction of Amoss[17]. Thirty-three cases were treated in the preparalytic stage and of these, twenty-five were discharged without paralysis. There was slight paralysis in 4 which disappeared at the end of three months. In the remaining 4, the paralysis was slight. In the same epidemic, 25 were treated after the onset of paralysis. Five completely recovered in three months. Fourteen had severe paralysis, 2 died, and the

remaining cases showed slight weakness or no report was received after they left the hospital. In 9 cases of the bulbar type treated with convalescent serum only 2 died.

These statistics would suggest the greatest optimism but Amoss reminds us that the virulence of outbreaks varies considerably and conclusions should not be reached until comparisons are made with untreated controls in the same epidemic. Nevertheless, convalescent serum is the most valuable treatment that is known at the present time for the disease. Unfortunately, however, the average practitioner is confronted with the common difficulty which applies to all convalescent serum—it is not available very often when it is most needed.

COLLECTION OF SERUM FROM DONOR.

Serum from recently recovered cases is recommended, as it is presumed to have a greater antibody content. In a recent communication Amoss[18] states that he has collected serum from suitable cases three or four weeks after onset.

He describes the collection of serum as follows:

"Obviously, the donor should be free from infectious disease and the blood Wassermann negative. As much blood as can be safely withdrawn (from 200 to 500 c.c. according to the weight of the patient) is collected in sterile centrifuge tubes or convenient sterile flasks, care being taken to direct the stream so that there is the minimum amount of damage to the red cells. The blood is allowed to clot and stand at room temperature over night. The serum is drawn off, centrifuged, and inactivated at 56° C. (132.8° F.) for one-half hour. After testing for sterility, it is recentrifuged, tested for sterility and placed in 20 c.c. bottles without preservative. When kept continuously in the ice-box, the serum is probably useful for one year. Samples of serum from several sources when available are given consecutively in one treatment. In emergency cases, the blood may be withdrawn from the donor into a sterile flask containing sufficient sodium citrate (chemically pure) to prevent coagulation, and immediately centrifuged and the plasma used for intravenous injection only."

AMOUNT INJECTED.

Since at best only weakly immune serum is available, correspondingly larger amounts of serum must be given. Obviously, the amount of serum which can be injected intraspinally is limited, and Draper has called attention to the severe reactions which follow the intraspinal injection of large amounts. On account of this limitation and for other reasons about to be described, Amoss uses the combined route of intraspinal and intravenous injections. Flexner and Amoss[19] found that poliomyelitis antibodies in the blood would pass into the spinal fluid if the meninges were inflamed, and Amoss and Eberson[20] showed that the disappearance of antibodies from the spinal fluid in meningitis proceeds at a slower rate if immune serum is also injected intravenously.

After withdrawal of the spinal fluid the needle is left inserted and the lumen stopped with the stylet, so that no more fluid escapes. Samples of the fluid are examined microscopically and chemically within seven minutes. If the fluid findings and clinical picture warrant the diagnosis of acute poliomyelitis, 15 to 30 c.c. of serum are given immediately and very slowly intraspinally, and the needle is then withdrawn. This method saves time and a second lumbar puncture in positive cases. The patient is placed in a comfortable position and from 50 to 100 c.c. of serum are injected intravenously. The injections are repeated after twelve hours in severe cases. If the symptoms are aggravated and the respirations become irregular or rapid and shallow, another lumbar puncture should be made immediately and the excess of fluid withdrawn.

The so-called antipoliomyelitis serums, obtained from horses immunized with streptococci from poliomyelitic central nervous tissues, contain no neutralizing power against the virus when tested by the *in vivo* method of Amoss and Eberson. These

serums therefore cannot be considered as having specific therapeutic properties.

As has been previously suggested, the availability of convalescent serum has been the chief drawback to its use. Several medical centers, however, have taken the occasion to prepare for outbreaks in advance. Donors have been located and arrangements have been made for procuring blood from them when and if required. No review of this subject would be complete without mention of the splendid work that Governor and Mrs. Franklin Roosevelt are doing at Warm Springs, Georgia. Governor Roosevelt has a particularly sympathetic interest in poliomyelitis, because of his own misfortune in acquiring the disease about fifteen years ago. He and Mrs. Roosevelt established the Georgia Warm Springs Foundation for the rehabilitation of the little victims of this disease. In addition to occupational and physical therapy and orthopedic treatment, their little charges are educated and assisted towards becoming self-supporting. Last year this foundation shipped a large quantity of convalescent serum to the Rockefeller Institution in New York City, and this serum was distributed through the committee on poliomyelitis of the Academy of Medicine in New York.

It is to be hoped that some day a more generally available serum will be perfected. This will not be done, however, until the etiology of the disease is definitely settled. In the meantime, every effort should be made to diagnose poliomyelitis in the preparalytic stage, in order that convalescent serum, which is the only serum containing viruscidal or neutralizing antibodies for the virus of the disease, can be used.

REFERENCES.

1. Landsteiner, K. and Popper, E.: Ztschr. f. Immun. u. exper. Therap., 2:377, 1909.

2. Flexner, S. and Lewis, P. A.: Jour. Am. Med. Assn. 53:1639, 1909.

3. Flexner, S. and Noguchi, H.: Jour. Am. Med. Assn. 60:362, 1913; Jour. Exper. Med., 18:461-485, 1913.

4. Smillie, W. G.: Jour. Exper. Med., 27:319-340, 1918.

5. Amoss, H. L.: Jour. Exper. Med., 19:212-216, 1914.

6. Amoss, H. L.: Jour. Exper. Med., 25:545-555, 1917.

7. Rosenow, E. C.: Jour. Infect. Dis., 22:379 (1918); Jour. Am. Med. Assn. 71:433 (August 10) 1918; Rosenow, E. C. and Nickel, A. C.: Am. Jour. Dis. Child., 33:27, 1927.

8. Nuzum, J. W.: Jour. Am. Med. Assn., 68:24, 1917.

9. Mathers, G.: Jour. Am. Med. Assn., 67:1019, 1916; Jour. Infect. Dis., 20:113-124, 1917.

10. Bull, C. G.: Jour. Exper. Med., 25:557-580, 1917.

11. Smillie, W. G.: Jour. Exper. Med., 27:319, 1918.

12. Amoss, H. L. and Eberson, F.: Jour. Exper. Med., 27:309 (1918); Jour. Exper. Med., 28:323, 1918.

13. Long, P. H., Olitsky, P. K. and Stewart, F. W.: Jour. Exper. Med., 48:431, 1928.

14. Rosenow, E. C.: Jour. Am. Med. Assn., 94:777, March 15, 1930.

15. Council on Pharmacy and Chemistry: Jour. Am. Med. Assn., 90:617, 1928.

16. Aycock, Lloyd and Luther, Eliot: Jour. Am. Med. Assn., 91:387, 1928.

17. Amoss, H. L.: Tice's Practice of medicine, Hagerstown, Md., W. F. Prior Company, Inc.; 5:335, 1930; South M. J., 23:18, 1930.

17. Amoss, H. L.: Tice's Practice of Medicine, Hagerstown, Md., W. F. Prior Company, Inc.; 5:335, 1930.

19. Flexner, S. and Amoss, H. L.: Jour. Exper. Med., 25:499-505, 1917.

20. Amoss, H. L. and Eberson, F.: Jour. Exper. Med., 29:597-603, 1919.

CASE REPORTS AND CLINICAL SUGGESTIONS

INTESTINAL OBSTRUCTION DUE TO WATERMELON SEED.

A. L. ANDERSON, M. D., and
C. W. ANDERSON, M. D.
HERNANDO, MISS.

I. W., negro male, aged 56 years, was first seen on August 14, 1930, complaining of frequent and severe tenesmus. The patient could remain on the bed only a few minutes without attempting a stool. His past history was negative. The physical examination was negative, except for a mass in the right lower abdominal quadrant. A rectal examination revealed several watermelon seeds near the rectal orifice. Repeated salt solution and olive oil enemas were each time productive of from 15 to 20 seeds and temporary relief. On August 18, rectal examination was attempted and hard impaction felt about two inches from rectum. Under general anesthesia, with a rectal speculum and long forceps not less than one quart of watermelon seeds were removed. The patient made a complete recovery.

NEW ORLEANS
Medical and Surgical Journal
Established 1844

Published by the Louisiana State Medical Society under the jurisdiction of the following named Journal Committee:

H. B. Gessner, *Ex-Officio*
For one year: S. M. Blackshear, M. D., H. W. Kostmayer, M. D., Chairman
For two years: W. H. Seeman, M. D., Randolph Lyons, M. D., Secretary
For three years: John A. Lanford, M. D.

EDITORIAL STAFF

John H. Musser, M. D.....*Editor-in-Chief*
L. S. Lippincott, M. D.....*Editor*
Willard R. Wirth, M. D.....*Editor*
H. Theodore Simon, M. D.....*Associate Editor*
Frank L. Loria, M. D.....*Associate Editor*
D. W. Jones, M. D.....*Associate Editor*
H. L. Rush, M. D.....*Associate Editor*

COLLABORATORS—COUNCILORS

For Louisiana	*For Mississippi*
H. E. Bernadas, M. D.	J. W. Lucas, M. D.
Daniel N. Silverman, M. D.	L. L. Minor, M. D.
C. C. DeGravelles, M. D.	M. W. Robertson, M. D.
J. B. Benton, M. D.	T. W. Holmes, M. D.
C. P. Gray, M. D.	D. W. Jones, M. D.
John McKowen, M. D.	W. G. Gill, M. D.
D. C. Iles, M. D.	E. M. Gavin, M. D.
G. M. G. Stafford, M. D.	J. W. D. Dicks, M. D.
	D. J. Williams, M. D.

Paul T. Talbot, M. D.....*General Manager*
1551 Canal St.

SUBSCRIPTION TERMS: $3.00 per year in advance, postage paid, for the United States; $3.50 per year for all foreign countries belonging to the Postal Union.

News material for publication should be received not later than the twentieth of the month preceding publication. Orders for reprints must be sent in duplicate when returning galley proof.

THE JOURNAL *does not hold itself responsible for statements made by any contributor.*

Manuscripts should be addressed to the Editor 1551 Canal St., New Orleans, La.

AMERICAN HOSPITAL ASSOCIATION MEETING.

Two months ago we called attention to the fact that the American Hospital Association would hold its convocation in New Orleans the week of October 20. We wish to repeat what was said at the time, that this is one of the largest and most comprehensive medical meetings held in the country, and one which will be of great assistance to those who are connected with hospitals in any way, be they physicians, nurses, social workers, dieticians or what not. As a matter of fact, the meeting is so highly educational that any physician irrespective of hospital affiliations or freedom from contact with hospital management would derive benefits from attending the sessions.

The last of the week preceding the big meeting will be characterized by the Annual Meeting of the American Protestant Hospital Association as well as gatherings of some smaller organizations. The main convocation commences Monday night, at which time Governor Long of Louisiana and Mayor Walmsley of New Orleans will welcome the participants who have come from other localities. Dr. C. G. Parnell, President of the American Hospital Association will respond. It is expected that the organization will have the good fortune to hear Mr. Julius Rosenwald of Chicago, a philanthrophist whose name is well known throughout this country, but who rarely speaks on public occasions. On Tuesday night at the Trustees Meeting, which will be presided over by Mr. Charles Rosen, Governor Graves of Alabama will give the principle address, to be followed by Dr. Stewart Roberts of Atlanta. Wednesday evening will be devoted to social activities, including a boat trip up the river, and Thursday evening the program will be conducted by various nursing groups. The forenoons of each day will be given over to round tables at which various problems of hospital management, the relation of the staff to the hospital, the teaching of internes, and so on will be informally discussed. The afternoon sessions will be given over to the small section meetings, when such sections will meet as those on the small hospital, the tuberculous hospital, social service, and nursing.

The various committees that are responsible for the excellent program that has been arranged for this meeting are insistent upon extending a most cordial and warm invitation to the doctors, nurses and social workers of the State of Louisiana and Mississippi to attend all the meetings, while the evening sessions will be open to the laity. It hardly seems believable that any of those who are directly responsible for hospital

management will miss this opportunity of meeting with others throughout the country interested in the same subject, but it would seem that not only to this more special group, but also to the medical profession as a whole, a splendid opportunity is given to learn about a branch of medicine which is not truly scientific but which from the professional, economic, and social standpoint is equally important.

FAREWELL TO SUMMER.

The increasing coolness of the air, and the gradual disappearance of flowers, the shorter hours of daylight, all conspire to indicate that fall is on us and winter approaches. The vacation season is finished; the general relaxation of effort that is universal with the onset of warm weather is a thing of the past, for this year at least. Now must we buckle down to work, to hard and sustained effort. The problems, which last spring, were postponed for the nonce, again rear their heads and must be dealt with now. Some of these may be merely local, but capable of arousing intense interest; others are of great general importance; state medicine, industrial medicine, group practice, governmental philantrophy, the curtailment of private practice are questions that require solution, perhaps not in the immediate future but at least in the not far distance.

Summer is done. Our medical societies are starting again, hospital staffs are reconvening. The medical profession is facing the future. How best can we help this winter in doing our share to elevate ourselves and to advance our profession? Does not the answer to this question seem obvious? Could a better one be formed than by reiterating that a persistent and regular attendance at the reopened meetings of our medical societies, a participation in their activities, and a share in the work of organized medicine will do more for the individual and for our medical group than any one measure that comes to mind. We must get together, stick together and possibly fight together to maintain our present position of independence and individualism. Now is the time to cultivate the habit of regular attendance at professional meetings where not only are we instructed and taught, and in turn may help to teach but at the same time develop an esprit de corps which will enable us to work together most successfully for the good of our profession.

NEPHROPTOSIS.

The recurring cycles of attention to various diseases and disorders which is so characteristic of medicine and surgery is well illustrated by the recent revival of interest in the movable kidney and measures for the relief of the condition. It was not so many years ago that the diagnosis of nephroptosis was made with a surprising frequency. Kidneys which could be barely felt just below the costal margin were assumed to be abnormal and held responsible for innumerable vague and irregular symptoms which only by the broadest stretch of the imagination could possibly arise from the organ wandering but a few inches from its bed. As a result of the attitude by physicians, various measures were employed to anchor the kidney where it was believed to belong. These procedures varied from extensive operations, many of which undoubtedly permanently injured the renal tissue, to so-called medical methods which depended upon encasing the sufferer in intolerably tight and uncomfortable belts and corsets. In spite of these various forms of active treatment the patients rarely recovered and in fact, if operated upon, were frequently worse than before their operations. Gradually a certain scepticism developed concerning the importance of the movable kidney as a source of trouble. Soon the pendulum swinging far to one side and the diagnosis of movable kidney was considered unintelligent and operative procedures viewed with abhorence.

With the advent of the urologist, bringing with him a gradually increasing number of exact methods of diagnosis, the concept of the harmlessness of a ptotic kidney began to change. This specialist has shown us that the movable kidney is frequently responsible for severe local symptoms which in turn are responsible for a host of nervous symptoms, and may be incriminated as the etiologic factor upon which may be hung the general symptoms associated with infection, occult until the kidney involvement is revealed by thorough study.

The diagnosis established, treatment should correct the conditions without doing further injury to the organ. Unfortunately most of the operative procedures mulitate the renal parenchyma or produce serious infections. To obviate these disconcerting possibilities Deming* has devised an extra peritoneal operation which he has used successfully for seven years. By means of a series of fine sutures a basket sling for the kidneys is so formed that it becomes impossible for the organ to descend. The result of the treatment in the relatively small series of 23 cases, show that 95 per cent of the patients were cured or completely relieved of their symptoms and these individuals had been completely incapacitated. A most conservative surgical attitude and a sane selection of cases was exhibited by this surgeon. It is to be hoped that such a judicious position will be generally assumed. There are undoubtedly a certain group of people made invalids as a result of a ptosed kidney. There numbers are few but they can be helped, and they should be, by a operation which is apparently safe, successful and free from the possibilities of producing injury to the kidney or capsule.

* Deming, C. L.: Nephroptosis: Causes, Relation to Other Viscera, and Correction by a New Operation, Jour. Arm. Med. Assn., 95: 251, 1930.

DR. GRANGER TO BE HONORED.

The Board of Administrators of the Charity Hospital have sent out invitations to a reception on Sunday, the fifth of October, to be given in honor of Dr. Amedee Granger, who, on this day, will celebrate the twenty-fifth anniversary of continuous service as chief of the Department of Radiology. This is a well merited expression of appreciation of a man who has labored long and faithfully for the good of the institution. Graduating from Tulane in 1901, Dr. Granger early appreciated the importance to medicine of the relatively new science made available by the studies of the German physicist Roentgen, and announced only six years previous to the graduation of this pioneer worker. Granger, completing his undergraduate training, prepared to make his life work roentgenology, and studied under the best known roentgenologists in this country and Europe. It followed that, on his return to New Orleans, the Board of Administrators of the Charity Hospital, as always on the alert for the best available men, should make him the head of the new radiologic department.

When Granger first took the position radiology was in its infancy. During the twenty-five years of service he has seen the science grow to manhood, one of the most valuable adjuncts to medical and surgical diagnosis and treatment. In the growth of this new specialty it is particularly gratifying to report that the New Orleans roentgenologist has done as much by research and investigations as any man in the country to help this child among the sciences attain its growth.

The Administrators of the Charity Hospital have done a very magnanimous thing in showing to the public their appreciation of the years of devoted science of one of the members of their staff. Not only does it honor one man but also it makes the large number of physicians on the Charity Hospital staff feel that their efforts are appreciated by those in authority.

HOSPITAL STAFF TRANSACTIONS

KING'S DAUGHTERS HOSPITAL, GREENVILLE.

At the meeting of the Staff of the King's Daughters Hospital, Greenville, on August 13, some 25 visiting doctors joined the members of the staff in a light banquet, which was followed by a program by the local men. A very interesting feature was the showing of the Canti films, followed by a general discussion.

At the September meeting of the Staff, Dr. A. G. Payne discussed spinal fracture and presented two cases of fracture in the lumbar region. One case was treated by operation and traction without application of a cast. The other was treated by a simple plaster trough. Both patients made splendid recoveries.

Dr. Paul Gamble presented a case of persistent incontinence of urine due to old post operative adhesions. This was promptly relieved by laparotomy with release of adhesions from the bladder. There has been no return or need of further catheterization.

T. B. LEWIS, M. D.

VICKSBURG SANITARIUM AND CRAWFORD STREET HOSPITAL.

Staff Meeting August 9, 1930.

Abstract: Cirrhosis of the Liver.—Dr. A. Street.

Patient—White, male, aged 32 years, admitted to hospital August 13, 1930. Occupation, oil well foreman.

Present Complaint—Low back pain and suprapublic discomfort, made worse by body motions. Stiffness in right posterior cervical region and right shoulder, duration 14 months. Much dyspepsia; no nausea or vomiting. Unable to work at all for the past year. Has lost 20 pounds in weight in seven months. Constipation; sweats considerably at night; no fever. Appetite is usually fairly good. Passes much mucus by the bowel. There is no hunger pain, but he feels better after eating.

Previous History—Gastroenterostomy in 1919 for duodenal ulcer after which he felt well for three years. Formerly had had sick headaches, but none recently. No venereal history. Typhoid fever when a child. Formerly drank considerable whisky.

Family History—Not remarkable; no tuberculosis.

Physical Examination—Only fairly developed, poorly nourished, and appears mentally depressed. Temperature 98.6° F.; pulse 88; respiration 20. Skin appears normal, except over the back where it shows roentgen-ray burns from numerous examinations. Lymph nodes not enlarged. Thyroid not enlarged. Reflexes normal. Tonsils show chronic inflammation of crypts. There is one unerupted tooth. Lungs are clear. Examination of heart shows nothing abnormal. Abdomen shows a right upper rectus laparotomy scar; no rigidity; no tenderness; no masses. Rectal examination shows prostate normal to palpation and no abnormal findings.

Blood: Erythrocytes 4,896,000; hemoglobin 87 per cent; leukocytes 7,300; small lymphocytes 26 per cent; large mononuclears 5 per cent; neutrophils 65 per cent; eosinophils 4 per cent; bleeding time 10 seconds; coagulation time 5 minutes 30 seconds; no malaria found; blood Wassermann, Kahn and Kline and Young test negative. Stool: Moderate amount of mucus; otherwise not remarkable. Urine: Nothing abnormal. Prostatic Fluid: No pus and normal. Gastric Analaysis: Total acid 66; free HC1. 55; combined acid 3; chemical blood xx. Roentgen-ray: Sinuses showed cloudy left sphenoid and left antrum. As the patient already had a roentgen-ray burn on the back from numerous examinations, further back from numerous examination, roentgen-ray and fluroscopic examinations were omitted.

Tentative Diagnosis: (1) Chronic sinusitis; (2) unerupted tooth; (3) mucus colitis; (4) gastrojejunal ulcer.

Treatment—Patient was put on ulcer diet and stomach lavage done each morning for one week. Operation on September 23, 1930; high right paramedian incision. Liver small and markedly cirrhotic. Duodenum shows no evidence of ulcer. Stomach appears normal. There is a large posterior gastroenterostomy stoma, made parallel to the long axis of the stomach and close to the pylorus. The afferent limb of jejunum goes sharply to the right. There are numerous adhesions, and some enlarged glands in the omentum, but no definite evidence of ulcer at the stoma. Gall-bladder is very large and free of stones and the wall appeared apparently normal. As there was no ulcer, the gastronenterostomy was taken down, and cholecystostomy done.

Subsequent—Patient tolerated the operation well and progressed beautifully until the seventh day when he had dilation of the stomach. This was treated by lavage and intravenous glucose with good results, and he is now up and about and free of symptoms except that he frequently says that he has sour stomach.

I feel that the important pathological condition in this case is the cirrhosis of the liver. I do not believe we would have diagnosed it without the exploratory laparotomy. The prognosis appears to be bad.

Staff Meeting September 10, 1930.

Abstract: A Few Thyrocardiac Cases.—Dr. L. J. Clark.

The four cases that I have to present have been puzzling. One that did not present as marked a picture of decompensation as some do, has been operated upon and has derived satisfactory results. The next patient is one that had had a partial thyroidectomy performed about ten years ago. She was seen about six months ago with a classical picture of broken heart compensation, and has responded well to rest and the usual medical thyroid treatment. The third is one of those puzzling borderline cases that offers a great deal of doubt as to a proper diagnosis. The fourth case is one of pseudo-angina.

Case 1: White, female, aged 27 years, admitted to the hospital March 29, 1930, complaining of nervousness, dyspnea, and crying spells. Onset about three months before; considerable loss of weight and appetite. Examination showed blood pressure 150/80; pulse 140, regular; systolic murmur at apex; enlarged symetrical thyroid; slight exopthalmos, marked tremor; basal metabolic rate plus 43.

Patient was treated medically and basal metabolic rate came to normal. Partial thyroidectomy done ten days after admission, followed by a smooth convalencence. Patient later became pregnant and had an exacerbation of cardiac symptoms which necessitated interruption. Since then has had no further trouble.

Case 2: White, female, aged 50 years, complaining of dyspnea, orthopnea, marked nervousness, and swelling of abdomen. On physical examination patient presented a rather classical picture of early heart failure.

Blood pressure 150/100; pulse 130, regular; heart enlarged; gallop rhythm; electrocardiogram not remarkable. Liver edge two fingers below costal margin; rales in bases of lungs; some slight edema of lower extremities. Basal metabolism determination refused. There was a small mass on the left side of the neck in the area of the incision of previous thyroid operation ten years ago. This mass was definitely a portion of the thyroid. There was no definite exophthalmos or tremor.

Patient was put to bed and given sodium bromide, sodium iodide and cascara. Responded very well to treatment considering the fact that she was very hard to keep in bed. She has been seen often and recently rate and rhythm are normal, there are no rales in chest and no enlargement of the liver. Aside from some infection in the kidneys and chronic nephritis, this patient is in good condition.

Case 3: White, female, aged 35 years, married, no children, complaining of peculiar fainty spells, and dyspnea on exertion. Is a chronic sufferer from a digestive disorder; has much "rheumatism" and complains of feeling tired and of loss of energy. Examination showed blood pressure 134/90; pulse 90, regular; definite hyperemia of face and neck with a slight salmon tint; septic tonsils and teeth; tenderness over gall-bladder.

The tonsils and teeth were removed with some benefit. She still has some dyspnea and feels tired. Has been taking Lugol's solution with fair results. Basal metabolism determination was refused in this case, but I do not thing that the rate is increased.

This type of case is always puzzling. The questions asked are—is it a rheumatic heart or a thyroid heart, or both.

Case 4: White, female, single, aged 21 years, complaining of paroxysmal precordial pain, gradually getting worse. Enlarged area in thyroid with moderately elevated basal metabolic rate. Condition rapidly became worse until the thyroid was removed about eight months ago. No recurrence of symptoms since.

Discussion: There are several factors which are responsible for the ease with which underlying hyperthyroidism as a causative factor in cardiac failure has been overlooked. One of these is that the urgent and most evident portion of the picture of cardia failure due to hyperthyroidism is the cardiac failure, the distressing orthopnea, the edema, and at times, the ascites and general anasarca. Another factor is that the underlying heart disease may be correctly diagnosed because of rheumatic infection and finding of valvular lesions, yet hyperthyroidism as the precipitating cause may be overlooked.

Furthermore, in the primary or exophthalmic type of hyperthyroidism, the thyroid gland is not only often without enlargement, but also may not be of sufficient size even to be visible. To add further difficulty to the diagnosis, the hyperthyroidism often associated with cardiac decompensation evidences itself not by the striking and typical activation of hyperthyroidism as seen in young and active individuals, but rather by a form of hyperthyroidism characterized by apathy in contrast to activation.

Thyroidism in itself does not by its direct action upon the heart produce destructive changes in the heart. Thyroidism frequently associated with

cardiac decompensation is atypical and of the apathetic type which is less striking and much more dangerous than the activating type.

There are practically no cases of cardiac decompensation due to associated thyroidism which cannot be submitted to surgery with only a reasonable risk. The possibility of restoration of cardiac capacity after removal of the associated thyroidism in thyrocardiacs is extraordinary. Toxic adenomata are no more apt to cause cardiac failure than are primary hyperthyroidism or exophthalmic goitre.

Abstract: Intracranial Hemorrhage in the Newborn.—Dr. G. C. Jarratt.

Patient—Newborn infant. Very difficult extraction with much force necessary to extract the on-coming head. At birth, child was very cyanotic and was resuscitated with much difficulty by the use of cold and hot water dips and carbon dioxide and oxygen mixture. Shallow sighing respiration began after about 20 minutes. The cry of the child was shrill and of the type heard with increased intracranial pressure. Ten c. c. of mother's whole blood was immediately given intramuscularly. Spinal puncture showed a bloody fluid under increased pressure.

Physical Examination—Well developed and nourished white male infant, weight seven and one-half pounds. Cyanosis; shallow and sighing respiration; anterior fontanelle open and not bulging; no spasticity or muscular weakness noticed. Roentgen-ray examination of chest showed enlarged thymus for which roentgen-ray treatment was given.

Course and Treatment—First day; child refused to nurse breast or bottle; given breast milk from medicine dropper. Shrill cry still present; child crying a great deal; anterior fontanelle bulging; some spasticity of upper and lower extremities. Spinal puncture done and eight c. c. of bloody fluid withdrawn; fluid under increased pressure. Fontanelle depressed after puncture. Another spinal puncture done after 12 hours and five c. c. of bloody fluid obtained under less pressure than before.

Second Day: Child cried a great deal during the night; fed by medicine dropper. No spasticity of lower extremities; upper extremities flaccid and are not moved; fontanelle bulging.

Spinal puncture done and eight c. c. of bloody fluid obtained under pressure. Another spinal puncture done in evening and eight c. c. of bloody fluid obtained, but less bloody than in morning.

Third Day: Fontanelle tense; flaccidity of upper extremities. Spinal puncture done and 15 c. c. of blood tinged fluid obtained under pressure. Still being fed with medicine dropper.

Fourth Day: Child beginning to use left arm, but not right arm. Anterior fontanelle tense. Nourishment taken from bottle for first time. Spinal puncture done and 15 c. c. of amber colored fluid obtained under pressure.

Fifth and Sixth Days: Child taking nourishment satisfactorily; using left arm more and more, but not right. Marked left internal strabismus.

Seventh Day: Fontanelle bulging; spinal puncture done and 12 c. c. of xanthochromic fluid obtained under some increased pressure.

Eighth to Twelfth Day: Child taking formula and gaining satisfactorily; fontanelle normal; continues to gain strength and use of left arm, but not of right.

Twelfth Day: Vomiting formula; anterior fontanelle tense; spinal puncture done and 20 c. c. of xanthochromic fluid obtained under very little pressure.

From the twelfth to seventeenth days, child continued to gain, nursed from bottle normally, and slept as a normal child. Child was discharged from hospital with normal use of extremities, except right arm, which still showed weakness to a marked degree, but being used to some extent.

The internal strabismus was still present. Spinal puncture done and clear fluid obtained under no increased pressure. Roentgen-ray of chest showed no thymus enlargement.

Discussion: I feel that one cannot at this time give an opinion as to the outcome of the condition in this patient. As to life I feel sure that the child will continue to thrive. As to paralysis and mentality, time will only tell. I do feel that early recognition of these cases with the giving of whole blood and therapeutic spinal puncture at frequent intervals until spinal fluid becomes clear are the only means of treatment we have and will alleviate some of the bad results we too often see. In some cases cure is apparently obtained.

LOUISIANA STATE ME DICAL SOCIETY NEWS

H. Theodore Simon, M. D., Associate Editor.

CHAIRMEN OF SECTIONS.

The following Chairmen of Scientific Sections for the approaching meeting of the Louisiana State Medical Society, New Orleans, April 14, 15, and 16, 1931, have been appointed by the President:

Medicine and Therapeutics—Dr. Randolph Lyons, New Orleans.

Pediatrics—Dr. Maud Loeber, New Orleans.

Nervous Diseases—Dr. Clarence Pierson, Pineville.

Bacteriology and Pathology—Dr. W. H. Seemann, New Orleans.

Public Health and Sanitation—Dr. W. J. Sandidge, Shreveport.

Gastro-Enterology—Dr. Sidney K. Simon, New Orleans.

General Surgery—Dr. J. Q. Graves, Monroe.

Gynecology and Obstetrics—Dr. H. W. Kostmayer, New Orleans.

Eye, Ear, Nose and Throat—Dr. S. M. Blackshear, New Orleans.

Urology—Dr. Frank J. Chalaron,, New Orleans.

Radiology—Dr. Lester Williams, Baton Rouge.

Orthopedic Surgery—Dr. H. A. Durham, Shreveport.

Those desirous of reading papers should communicate with the various Chairmen as promptly as possible. The program for each Section must be in the hands of the Secretary-Treasurer not later than February 14, 1931.

Dr. H. Daspit, Dean of the Graduate School of Medicine of the Tulane University of Louisiana, addressed the Teachers' Institute at the Charles J. Colton Public School, October 9, 1930, on "What Society Has a Right to Expect From the Public Schools" from a mental hygiene standpoint.

UNITED STATES CIVIL SERVICE EXAMINATION.

The United States Civil Service Commission announces the following competitive examinations:

Medical Officer, Associate Medical Officer, Assistant Medical Officer.

Applications for medical officer, associate medical officer, and assistant medical officer must be on file with the United States Civil Service Commission, Washington, D. C., not later than December 30, 1930.

These examinations are to fill vacancies in the Veterans' Bureau, Public Health Service, Coast and Geodetic Survey, Panama Canal Service, and Indian Service.

On account of the needs of the service, papers will be rated as received and certification made as the needs of the service require.

Full information may be obtained from the United States Civil Service Commission, Washington, D. C., or from the Secretary of the United States Civil Service Board of Examiners at the post office or customhouse in any city.

NOTICE OF EXAMINATION FOR ENTRANCE INTO THE REGULAR CORPS OF THE UNITED STATES PUBLIC HEALTH SERVICE.

Examination of candidates for commission as Assistant Surgeon in the Regular Corps of the U. S. Public Health Service will be held at the following-named places on the dates specified:

At Washington, D. C., Nov. 3, 1930.

At Chicago, Ill., Nov. 3, 1930.

At New Orleans, La., Nov. 3, 1930.

At San Francisco, Cal., Nov. 3, 1930.

Candidates must be twenty-three years and not over thirty-two years of age. They must have been graduated in medicine at a reputable medical college, and have had one year's hospital experience or two years' professional practice. They must satisfactorily pass oral, written, and clinical tests before a board of medical officers, and undergo a thorough physical examination.

Successful candidates will be recommended for appointment by the President, with the advice and consent of the Senate.

Request for information or permission to take this examination should be addressed to the Surgeon General, U. S. Public Health Service, Washington, D. C.

H. S. CUMMING,
Surgeon General.

THE NURSE THE DOCTOR WANTS.

The Committee on the Grading of Nursing Schools reports that the ideal nurse for the present-day physician is one who has good breeding and an attractive personality, skill in giving general care and making patients comfortable, who can observe

and report symptoms well, takes care to follow medical orders and is adept at handling people.

This picture of the perfect nurse was ascertained from questionnaires sent to doctors in many branches of medicine, by the Committee on the Grading of Nursing Schools, which is conducting a five-year study of nursing and its problems. The above qualifications were the five most stressed by the more than 4,000 physicians from all parts of the country who answered the queries.

Just how the various requirements for a good nurse rank in the minds of the physicians as a whole, may be seen from the following:

65 per cent want the nurse to have skill in general care; 65 per cent skill in making the patient comfortable; 45 per cent, skill in observing and reporting symptoms; 43 per cent, care in following medical orders; 34 per cent, good breeding and attractive personality.

The modern physician thus places the old-fashioned concept of a nurse as "a pair of hands and feet' at the bottom of the list. His demand now is for a woman of good background, of high professional principles, with thorough training and experience in the actual care of the patient, as nurse for his case.

The study shows that the demand for practical nurses by physicians is steadily dropping, with 84 per cent preferring the graduate, registered, trained nurse at all times for their own cases, and an additional 8 per cent preferring them always for certain types of cases.

The general practitioner and the internist are most interested in the ability of the nurse to give general care, 69 per cent and 70 per cent, respectively, registering for this quality, as compared with the average percentage of 65. The neurologist is least interested in it, though more than half of those questioned checked for it.

Skill in observing symptoms is most desired from the nurse by the surgeon, neurologist, obstetrician and pediatrician. The three last-named groups also had a more than average interest in the qualification of good breeding and personality. The surgeons emphasized skill in asepsis and care in following medical orders as well.

The neurologists are by far the most interested in having for their patients nurses who can handle people, 61 per cent checking this, as compared with an average of 30 per cent.

Nurses who take particular care to follow orders shine brightest in the eyes of the pediatricians, 57 per cent of them desiring this qualification, while the average demand is 43 per cent. The surgeons and the obstetricians are most interested in having nurses familiar with hospital routine and their personal methods.

MEETING OF THE AMERICAN PUBLIC HEALTH ASSOCIATION.

The 59th Annual Meeting of the American Public Health Association will be held in Fort Worth, October 27-30. This is one of the very important meetings of the year not only for the medical man and the health officer but also for those engaged in health control. The program calls for addresses from nearly two hundred speakers and includes some of the country's leading health officers, physicians, scientists, sanitary engineers, experts in epidemiology, in child and industrial hygiene, and many other phases of public health. The speakers inclue Surgeon General Cumming, President of the Association; S. W. Wynne, M. D., Commissioner of Health of New York City; Rafael Silva, M. D., Chief of the Department of Public Health of Mexico City, Mexico; Gordon Bates, M. D., General Secretary of the Canadian Social Hygiene Association of Toronto; John M. Bunker, Ph. D., Professor of Biochemistry and Physiology of the Massachusetts Institute of Technology; W. A. Evans, M. D., Director of the Health Department of the Chicago Tribune; W. H. Ross, M. D., President of the New York State Medical Society; William C. Hassler, M. D., Health Officer and Executive Officer of San Francisco; T. F. Murphy, M. D., Chief Statistician for Vital Statistics, Bureau of the Census, Washington, D. C.; John A. Farrell, M. D., Associate Director, International Health Division, Rockefeller Foundation, New York; John W. Burns, M. D., President, Texas State Medical Association; James A. Hayne, M. D., Commissioner of Health of South Carolina; Louis I. Dublin, Ph.D., Chief Statistician of the Metropolitan Life Insurance Company, New York City; Joseph C. Bloodgood, M. D., C. E. A. Winslow, Dr. P. H., Yale University, New Haven, Conn.; Aristides Agramonte, M. D., Professor of Bacteriology of the University of Havana, Cuba; George W. McCoy, M. D., Director of the National Institute of Health, Washington; W. N. Dickie, M. D., Secretary of the California Board of Health; J. G. Cunningham, M. D., of the Provincial Board of Health of Ontario, Canada; and many others.

The Association calls attention to the fact that following the Annual Meeting a nine-day tour in Mexico has been arranged for the Association members and their families. A considerable number of tickets, however, have been sold for this tour.

MISSISSIPPI STATE MEDICAL ASSOCIATION NEWS

L. S. Lippincott, Editor

H. L. Rush, Associate Editor *D. W. Jones, Associate Editor*

FROM OUR PRESIDENT.

SCIENTIFIC PROGRAMMES.

"A"

Programs of past meetings have been under fire from the President's correspondents to an extent that shows some degree of irritation. An analysis of eleven communications reveals two chief complaints.

1st. There is too large a proportion of papers by non-members.

2nd. There are too many "repeaters," both for papers and for the opening of discussions.

The question of the number of non-members on the programmes has been discussed often and sometimes warmly. One president, some years ago, insisted on an "All Mississippi" meeting. Last year the proportion of members to non-members was only 28 to 10. That appears a little out of proportion, especially in the section on Hygiene and Public Health, where members furnished only one-half of the programme. In the Eye, Ear, Nose and Throat Section, which, being smaller than the others, can get closer in touch with its chairman, it has been the custom of late years to have as visitors one ophthalmologist and one oto-laryngologist. This leaves ample room for the members and at the some time brings us in touch with what is going on outside the State. Moreover, it makes an invitation to appear on our program something of an honor, and the chairmen are thereby enabled to secure visitors of real ability and reputation. At the last meeting there were papers by Drs. E. C. Ellett of Memphis and R. C. Lynch of New Orleans. For so small a section to draw that kind of talent is a distinct argument against making ourselves cheap by promiscuous invitations.

An argument, or at least an excuse, for "repeaters" from among our own membership is readily found in the fact that the chairmen do not always find it easy to fill their programs. Members invited to furnish papers frequently decline, sometimes do not even reply to the chairman's letter of invitation, so the chairman, who is required by hook or crook, to furnish a programme, cannot always be justly blamed if he calls for help from the "faithful few." The same state of affairs applies to the discussions for the chairman, very naturally, likes to be reasonably sure that the men appointed to open discussions will be on hand to do so. So he appoints men he thinks will respond. Sometimes he hits, sometimes he misses by a mile or two. There are two gentlemen, members of more than average reputation, who have in recent years been frequently assigned the task of opening a discussion and who have never yet responded. In fact, they rarely attend a meeting.

The program committee should remedy all this, but the program committee, for pretty much always, has been little more than three names on paper. The By-Laws give them very definite powers and duties, but it is questionable if any of them have ever read the By-Laws. At least that is the impression one gets from the way they fail to exercise their powers and neglect their duties. So our programs do leave much to be desired. Consider the last one.

There were an even hundred speakers, chosen from among our members. One man read two papers and opened one discussion. One read a paper and opened two discussions. Four men read each a paper and opened a discussion. Nine men opened two discussions each.

So that fifteen men were assigned to furnish one-third of the programme. The crowning error was the assignment of President Gamble to open the discussion of Dr. Gray's paper. Such things just aren't done in the best medical circles, although Dr. Gray describes it as "the most thrilling moment of the whole meeting."

The 1930 program was selected for analysis simply because it is the most recent. We have had others just as bad. In the past three years, duplications have been quite heavy. Jake Ullman is apparently our favorite work-horse, his name having appeared on the program six times in that period. Boswell and Dearman run second, five times each; and eleven others tie for third place with a total of four each.

All of this is respectfully referred to the Committee on Scientific Work, the section chairmen and all members who are invited to read papers or open discussions at the next meeting. The critics should remember that they have no "kick" unless they have responded to every request, either to furnish papers or open discussions.

E. F. HOWARD, M. D.

WARREN COUNTY HEALTH DEPARTMENT.

From Dr. F. Michael Smith, Health Officer:

"We are proud of the Mississippi Section of our Journal every month and congratulate you on the most creditable showing this section is making.

"There is no special news from the Warren County Health Department other than unusual activities in typhoid inoculations and immunizing against diphtheria, typhoid and smallpox, children who are expecting to enter school this fall. It might be of interest, however, to mention that the department was complimented by a visit during the month of August from foreign health officials who are studying the methods and activities of public health work in the United States. Our two visitors for August were Dr. Jivko Athanass Michailoff from Sofia, Bulgaria, and Dr. J. Hernandez Lira from the department of health, state and city of Veracrus, Mexico."

NATCHEZ CHARITY HOSPITAL

Dr. S. L. Hutchinson resigned on September 1 to enter private practice at Tupelo, his home town. Dr. Hutchinson has been with the Charity Hospital for three years, during which time he has made many friends.

Dr. G. H. Butler, McComb, is now Assistant Superintendent.

The Staff of the Natchez Charity Hospital meets on the third Tuesday of each month at 8 o'clock, P. M., in the hospital dining room. The Staff is now composed of the following members: Active Medical and Surgical, Drs. H. M. Smith, W. K. Stowers, J. W. Chisholm, Marcus Beekman, H. Ratcliff and E. E. Benoist; Consulting, Drs. P. Beekman, J. S. Ullman, J. D. Shields and J. C. Rice; Eye, Ear, Nose and Throat, Drs. Lucien S. Gaudet and R. T. Smith; Dental, Drs. L. O'Ferrall and G. S. Handy.

HARD TIMES.

"Say fellows, what is all this we hear about hard times? Why are we so pessimistic? Deep down in our hearts we have implicit confidence in ourselves, in our banks, in our business houses, and in our government, so instead of talking so discouragingly, why not give verbal expression to our true feelings. There is good psychology in it.

We don't mean for you to discount the current depression and the lessons we ought to learn from it, but instead of always and everlastingly talking hard times and starvation, let's talk ourselves into better times. When your companion begins talking hard times, try showing him how much better off we are than practically the rest of the world. We have fair crops, and much better than other part of the country. It isn't so bad. It is much worse elsewhere. There is better business just around the corner—let's talk it up, and quit dashing cold water in its face."—Claude Hathorn.

STATE CHARITY HOSPITAL, JACKSON.

"On Friday, August 29, Dr. Willis Walley, newly appointed superintendent of the State Charity Hospital, had the first meeting of the new Staff, composed of Drs. Anderson, Burnham, Crofford, Diamond, Garrison, W. H. Hall, R. W. Hall, Jones, Magee, Merritt, McLean, Moore, B. N. Walker, Ware, and Werkheiser.

"Dr. Walley gave an elaborate discourse on the duties of the respective members of the staff and what he expects of each of them. The main idea is that he expects them to work together harmoniously for the welfare of the institution without bickerings or petty jealousies, and with loyalty to the great idea of doing the most possible for the public good with the facilities at hand.

"The institution is greatly run down both in physical properties and in the estimation of the public, and it will take hard work and man sacrifices to get it up to what it ought to be; but the new superintendent is determined to bring it back to standard. Just now, there are many problems to face. The building is in bad condition, beds and bedding are short, the operating outfits are dilapidated and a good part of the hospital has been closed on account of the small appropriations to run it. But, worst of all, nearly three-fourths of the appropriation for the year 1930 has been spent in the first seven months of the year, and, in addition, there are outstanding debts of nearly $5,000, many of which should have been paid out of last year's appropriation. If these debts are paid now, it will leave just about enough out of the State appropriation to run this institution two months. Unless about $7,000 can be raised from some source, the institution will have to close down for about two months.

"The biennial report shows that Hinds County has had about one-third of all the patients admitted in that time. It was suggested, therefore, that Hinds County ought to make a special appropriation to the institution to prevent it from having to be closed down, and a committee was appointed to present this matter to the Board of Supervisors at its next meeting.

"Dr. Walley has reopened some of the hospital, and by the use of cots he can now take care of about one hundred patients at a time, many more than have been accommodated recently. Even at that, he cannot begin to take care of all the worthy cases. He is also looking carefully into all applications to see that only cases of real charity are admitted. The physicians of the State are especially urged to cooperate with him in this matter. Heretofore, many physicians have sent here cases who are able to pay for services, and

thus many deserving cases have been turned away from lack of room.

"This is a charity hospital and hereafter it will be conducted for charity cases only, says the new superintendent." D. W. JONES, M. D.

DR. JOSEPH C. ARMSTRONG.

Dr. Joseph C. Armstrong was born in Vaiden, December 4, 1873. He died at Jackson, July 3, 1930, of chronic nephritis. Dr. Armstrong graduated in medicine at Vanderbilt University, afterwards spending two years in the New York Polyclinic. He practiced medicine for 25 years at Water Valley and moved to Jackson after spending two years with the American Expeditionary Forces during the war. Since 1921, his practice has been limited to internal medicine. Dr. Armstrong had built up a large practice, and was highly esteemed by his fellow practitioners and all who knew him.

Dr. E. L. Walker, Magee, reports that he has delivered five sets of twins this year and that single births have been unusually large.

WOMEN'S AUXILIARY.

From Mrs. Henry Boswell, Recording Secretary:

"The officers and councilors and state chairmen of the Auxiliary to the Mississippi State Medical Association met in the Preventorium at Sanatorium August 28, for the purpose of organizing a drive for membership and to perfect plans for the chief work of the Auxiliary, that of raising funds to be used in the rehabilitation of the children in the Preventorium.

"The visiting ladies were given a lovely luncheon in the Preventorium dining room, where they enjoyed watching the fifty children celebrating their monthly birthday party. After luncheon Mrs. Brame, Dr. Boswell and Mrs. D. J. Williams were presented by Mrs. Polk, State President. They talked of the far-reaching work of the Preventorium and inspired every one present to go to work at once to do everything possible in this work that touches the lives of all our people so closely.

"Those present besides Mrs. Brame and her staff of workers, were: Mrs. L. L. Polk, Purvis; Mrs. S. W. Johnston, Vicksburg; Mrs. A. Street, Vicksburg; Mrs. W. C. Poole, Cary; Mrs. D. J. Williams, Gulfport; Mrs. W. L. Little, Wesson; Mr. and Mrs. Henry Boswell, Sanatorium; Mrs. Howell and Dan Howell, Gulfport, and Mrs. H. C. McCabe, Vicksburg."

Mrs. J. H. Wright, Hernando, is Councilor for the Second District, and Mrs. J. C. Culley, Oxford, for the Fourth District.

COUNCIL MEETING.

The Council and Officers of the Mississippi State Medical Association met in special session, upon the call of President Howard, at the Edwards House, Jackson, at 5 p. m., Thursday, August 21. There were present: Drs. E. F. Howard, President; J. C. Culley, President-elect; T. M. Dye, Secretary; C. W. Patterson, M. J. L. Hoye, and L. L. Polk, Vive-President; L. S. Lippincott, Editor of the Journal, and D. J. Williams, M. W. Robinson, J. W. Lucas, W. G. Gill, and D. W. Jones, Councilors.

President Howard went into an elaborate discourse on organization, and the duties of the respective officers of the Association in that matter. He gave a detailed statement of the list of physicians eligible for membership in the several counties, not now in the Association, and earnestly requested the co-operation of all of the officers in urging every eligible physician in the State to affiliate himself with the organization. He divided the state into three districts and appointed the vice-presidents as mentors of the several districts, in charge of a campaign for membership. The respective Councilors were admonished as to their duties as the official organizers of the Association, and urged to take up with their respective secretaries the matter of membership. In other words, an intensive campaign was projected with the object of bringing into the membership of the Association every eligible doctor in the State. After adjournment of this meeting, the Council went into executive session. Councilor Gill presented a signed request from a majority of the physicians of Scott County asking that this county be transferred to the Fifth District with membership in the Central Medical Society. The request was approved and the secretary of the Council was instructed to take up the Charter of Scott County and merge the same into the Central Medical Society. A like request was submitted by Councilor Minor, in writing, for Panola County, requesting that this county be allowed to come into the North Mississippi Six County Medical Society. The request was approved and Councilor Minor was instructed to take up the Charter of the Panola County Society and merge the same as requested into the North Mississippi Medical Society, securing a new charter. Secretary Dye was requested to again remind the local societies that dues must be paid by February 1. Failure of the Secretary of a local Society to file his report by February 1, automatically suspends that Society from membership until such report is filed; and the members

thereof are ineligible for defense by the Council during that interval. It is urged that dues be collected before January 1, as far as possible.

Secretary Dye was requested to send a list of physicians in each county, not members of the association, to the respective Councilors immediately after receiving these reports.

The Council approved defense of the law-suit of J. H. Smith vs. R. A. Clanton et al, and ordered a check issued for attorney's fee in this case. In the case of Ira Martin vs. Dr. S. H. Hariston, Councilor Gill was instructed to look into this matter, the plaintiff in this case died since the suit was filed.

Council adjourned to meet in May at the regular Convention.

D. W. JONES, Secretary.

DR. E. L. GILBERT

"Dr. E. L. Gilbert was born December 24, 1875 in Sumter County, Alabama. When a very small child his father and mother, Mr. and Mrs. R. L. Gilbert, moved to Binnsville, Miss., where Dr. Gilbert was reared. He received his literary education at Fairview College, Binnsville, and the State Normal School at Iuka. He received his medical education at Memphis Medical College, where he specialized in surgery and graduated in 1901; after which he took several post graduate courses in New Orleans, and Chicago.

"After graduation, he located at his home town, Binnsville, taking up general practice and surgery for twelve years, at the same time acquiring quite a large farming interest. In 1903 he was married to Sallie Palmer Owens who became of great assistance in his life work until her death in January, 1929. Twins, Edward Lee and Evan Lonnie were born to them in December, 1904.

"Dr. Gilbert moved to Scooba, Miss., in 1913 and formed a partnership with Dr. J. B. Mooney, opening the Scooba Sanitarium the same year. He remained there with a large surgical practice until 1922. May 1, 1922 he moved to Electric Mills, Miss., and became chief surgeon of the George C. Hixon Memorial Hospital, owned by the Sumter Lumber Company, and worked there until his death, August 13, 1930.

"It is indeed with a heartful of grief of a deep personal nature, as well as tenderest sympathy for his bereaved sons and an appreciation of the fact that Kemper County has lost one of her greatest benefactors, that I shall add these words of devotion and homage to the brief outline above of the life of one of the best friends I have ever known.

"Upon entering the practice of medicine in 1910, it was my good fortune to have entered into a partnership with Dr. Gilbert, then located in Binnsville, and it was while associated with him so closely, and observing daily his utter devotion to both his work and his home, and his unfailing, unselfish interest in the welfare of his community, that I learned to love and appreciate the wonderful character that he was. He, or his loyal wife, who was so much help and inspiration to him, were never too tired or sleepy to get up and respond to a call for help, even though they knew no worldly recompense might ever be expected. Later, in his hospital work, he was the same good friend and neighbor, ever ready to go and do; much more than human strength could long endure, never turning away the poor and needy, always sharing the burdens of others with a helpful work and a pleasant smile.

"Although devoting himself unreservedly to his heavy professional work, yet never once did he fail any duty that befell him as a progressive, helpful citizen of his community. His interest and generosity in all school and general welfare work was ever to be depended upon. He was deeply loved and respected by the doctors throughout the county, and was President of the Kemper County Medical Society.

"Although in failing health for some months his sudden death was unexpected, and a shock to the entire county. The hundreds of weeping men and women and the wealth of floral offerings which were seen at his grave well attested the deep devotion of the people for one of the very best friends and citizens they had ever known and lost."

V. M. CREEKMORE, M. D.,
Secretary, Kemper County Medical Society.

DR. LEWIS ERNEST MARTIN

Whereas, God in his all-wise Providence has called from our midst our beloved brother and associate, Dr. Lewis Ernest Martin of Anguilla, Mississippi, resolved that;

In the death of Dr. Martin, a member of the Issaquena-Sharkey-Warren Counties Medical Society, we mourn the loss in the prime of his usefulness of one of the most valued of our members and associates.

Dr. Martin was born at Egremont, Mississippi, November 4, 1881, and died suddenly of a heart attack September 7, 1930, at his home in Anguilla.

Raised on the farm, Dr. Martin as a boy exhibited those qualifications which mark men among men. While yet a young man, he was called upon to take the place of his father, who died suddenly while managing the plantation of Dr. George C. Harris at Mt. Helena. This association with Dr. Harris led to a lasting friendship between the two, and through this bond Ernest was assisted in his

medical education at Vanderbilt and Tulane Universities.

He began practice in association with Dr. Bernard at Anguilla in 1906, and in 1907 took as his bride Miss Katie Joor, one of the most charming girls that Rolling Fork has ever produced.

Dr. Martin was a successful physician from the beginning, beloved by his large clientele, kept abreast of the times, active in his county, state, and national medical associations, a devoted husband, loving father, a good friend and a leading citizen.

Resolved further that a copy of these resolutions be spread on the minutes of the society, and that a copy be sent to the wife and family of Dr. L. E. Martin.

(Signed) H. S. GOODMAN,
W. C. POOL,
E. B. STRIBLING,

Committee for the Issaquena-Sharkey-Warren Counties Medical Society.

JACKSON.

The medical profession at Jackson has recently undergone quite a change in the way of deaths and new arrivals. Within the past year, we note the deaths of Drs. E. H. Galloway, O. M. Turner, J. C. Armstrong, W. S. Hamilton, E. L. Posy, L. H. Howard.

Among the new comers, in the order of recent arrival, we note Drs. Carter O'Ferrel, Lonnie Moseley, J. K. Mullock, J. C. Russell, W. F. Hand, and L. K. Mayfield. Still earlier arrivals, but yet late enough to be classed as new doctors, are H. R. Hays, A. G. Wilde, R. C. Baysinger, T. E. Wilson, T. Ainsworth, T. J. Crofford, O. Simmons and Robin Harris.

D. W. JONES, M. D.

From Dr. J. W. D. Dicks, Natchez:

"The Mississippi Section is growing fine! You are to be congratulated on the splendid showing this section is making.

"The three medical societies of the Eighth Councilor District will hold a joint meeting at Brookhaven, at noon, October 7. A very attractive program has been arranged for this meeting. The officers of the State Medical Association are invited to be with us on this occasion. We expect to make it a very interesting meeting and expect to have a large attendance."

NEW ARRIVAL.

Born to Dr. and Mrs. Samuel E. Field, at Field Memorial Hospital, Centerville, a 9¼ pound son, Samuel Eugene Field, Jr.

Dr. A. H. Little, Oxford, has recently returned from a trip to Oklahoma City where he spent a time at the Balyeat Hay Fever and Asthma Clinic in the study of the diagnosis and treatment of allergic diseases. Dr. Little is preparing to devote considerable time to the diagnosis and treatment of allergic conditions.

COMMUNICABLE DISEASES.

The Bureau of Communicable Diseases of the Mississippi State Board of Health reports for the month of July, 297 cases of typhoid fever and 43 cases of diphtheria. Knowing as we do that typhoid fever can be prevented and that the means of prevention, typhoid vaccine, can be obtained from the State Hygienic Laboratory without cost, it is not very cheering to note that we had 297 cases in one month in Mississippi. With dependable preventatives of diphtheria easily available to everyone, Mississippi surely should not have 43 cases, especially in the summer months when diphtheria is not considered a prevalent disease. It would be interesting to know how many of the physicians of the state have taken typhoid vaccine within three years themselves or given it to the members of their own families. It would also be interesting to know how many of our doctors know by test that their own children are immune to diphtheria. We cannot well preach prophylaxis to our patients unless we ourselves set the example.

Malaria again! The Bureau of Communicable Diseases publishes the report of physicians showthat 7,427 persons suffered from malaria during the month of July alone. How many of those reports were substantiated by the finding of the parasites in the blood? How many doctors of Mississippi actually believe that there were 7,427 cases of malaria? Whether doctors themselves believe it or not, such reports given out officially by the State Board of Health are believed by people in other sections of the country and have a very real affect in preventing them from coming to our State to make their homes or even for short visits.

The physicians of the State are to be congratulated on the fact that more than 99 per cent made reports during the month of July as requested by the State Board of Health.

Dr. E. L. Grubb has given up his practice at Paive to move to Tennessee. Dr. G. M. Martin, Picayune, has taken the place of Dr. Grubb at Paive.

EAST MISSISSIPPI STATE HOSPITAL.

Dr. C. Rolland Bennett, East Mississippi State Hospital, Meridian, reports the following:

Dr. and Mrs. M. J. L. Hoye have announced the marriage of their daughter, Margaret, to Mr. Melvin Savage Ashcroft, on the evening of August

21. Numerous social activities were given in honor of the young couple, who will make their home with Dr. and Mrs. Hoye.

Dr. M. J. L. Hoye, Vice-President of the Mississippi State Medical Association, addressed a meeting of the North East Mississippi Thirteen Counties Medical Society in Corinth, on September 16. The subject of his address was "Organized Medicine" and the importance of increasing the active membership in local and state societies was emphasized.

"The Medical Society is the keystone to the successful practice of medicine in any community and without its functioning properly and with 100 per cent efficiency, no community can hope to benefit from the science of medicine as it is today—the greatest humanitarian endeavor on the face of the earth."

BOLIVAR COUNTY.

Drs. E. R. McLean and W. A. Carpenter, Cleveland, have organized a clinic with Dr. J. P. Wiggins, Merigold, as one of the partners.

Dr. and Mrs. L. B. Austin, Rosedale, spent the month of August in Chicago. While there Dr. Austin attended the two week's clinics held at the Cook County Hospital by the Chicago Medical Society. The small fee charged is to cover the expenses of the Medical Society incurred during that time. Dr. Austin reports that the clinics, both medical and surgical, and including diseases of the eye, ear, nose and throat and obstetrics, were worth attending as many interesting cases were shown. Dr. Austin also visited the Mayo Clinic before returning home.

Miss Ollie Irene Lowrey, R. N. in charge of the King's Daughters Hospital, Rosedale, was called home on August 25, because of the illness of her father.

C. W. PATTERSON, M. D.

TRI-COUNTY MEDICAL SOCIETY.

Dr. W. H. Frizell, Brookhaven reports as follows:

The Tri-County Medical Society met in regular quarterly session at Tylertown, September 9, at noon. After an elegant luncheon at the City Cafe the meeting was called to order in the parlors of the City Hotel by the President, Dr. W. L. Little. Secretary J. R. Markette, being absent the chair requested Dr. W. H. Frizell to act as Secretary.

The usual routine of business was transacted and committee reports on various matters received.

Dr. L. D. Dickerson reported five interesting cases of placenta praevia with complete case histories. Dr. W. H. Frizell reported three similar cases as did also Dr. Little. These reports were received with more than passing interest.

Dr. W. H. Frizell reported a case of "Thymic Asthma" in an infant, complicated with rickets.

The Society then discussed the coming joint meeting of the Tri-County Society, the Pike County Society, and the Homochitto Valley Society on October 7, at noon, in Brookhaven. The following program for this meeting has been prepared:

Treatment of Benign Lesions of the Cervix Uteri.—Dr. W. T. Black, Memphis, Tennessee.

Functional Disorders of the Gastro-intestinal Tract.—Dr. James S. McLester, Birmingham, Alabama.

Non-Penetrating Injuries of the Abdomen.—Dr. Battle Malone, Memphis, Tennessee.

With these three outstanding essayists it is expected that nearly a 100 per cent attendance of the physicians of the Eighth Councilor District will be obtained. The committee on arrangements is preparing for a real lively meeting and a revival of interest among the doctors of this territory. There is a community of interest in this district and a brotherly spirit pervades it, so with the guidance of Councilor J. W. D. Dicks, a medical feast of good things in Brookhaven on October 7, is anticipated. Dr. W. H. Frizell, O. M. Arrington and J. R. Markette are the members of the arrangement committee appointed by President W. L. Little.

Dr. J. T. Butler has completely recuperated from an aggravated illness of a few week's standing and he is now the same jovial fellow.

Dr. O. N. Arrington has recently returned following a gall-bladder operation. He is now able to attend to most of his work.

Miss M. A. Brunner has resigned as Superintendent of the Brookhaven King's Daughters Hospital and now is serving the Eye, Ear, Nose and Throat Hospital at Memphis.

Miss Frances Lindsey, Jackson, is now Superintendent of the Brookhaven Hospital.

Dr. A. B. Harvey has returned and bought back his interest in the Tylertown Hospital. He is associated in that institution with Dr. B. L. Crawford. These gentlemen operate one of the best small hospitals in the State.

FROM OUR SECRETARY.

"To County Secretaries:
"My Dear Doctor:

"President Howard has in mind a plan looking toward indemnity insurance for the members of the State Medical Association, and to that end he is anxious to know just how many of your members carry indemnity insurance, how much they carry, and the annual cost.

"If you will get this data and send it to me I will collect it in shape and send to Dr. Howard.

"I thank you for this, and I wish you a big year in your Society work. Truly your friend,

T. M. DYE, Secretary,
Mississippi State Medical Association."
Clarksdale, Mississippi,
September 8, 1930.

JACKSON COUNTY HEALTH DEPARTMENT.

"Because I believe the event here reported presages a new era in medical practice in the less populous counties of the State and one which will solve the problem of rural medical service, I take great pleasure in making the report and Jackson County is proud to be the first to take this forward step.

"On August 11, the Board of Supervisors of Jackson County let contracts for the erection of a general county hospital, same to be turned over to the county for equipping and maintenance not later than November 15 of this year. The hospital will be operated as a county project and will accommodate both charity and pay patients. Though designed to care for only 25 patients, the institution will be modern in every detail and is so designed that additions can be made to conform to the existing unit."

R. G. LANDER, M. D.

Dr. Eva E. Strahan, Meridian, has been recently visiting in Vicksburg while recuperating from an operation for appendicitis.

ISSAQUENA-SHARKEY-WARREN COUNTIES MEDICAL SOCIETY.

Twenty members and four guests attended the regular monthly meeting of the Issaquena-Sharkey-Warren Counties Medical Society on September 9. The scientific program included the following:

1. Carcinoma of the Large Intestine (Illustrated). Dr. Street.

Discussed by Drs. T. P. Sparks, Jr., Jackson and W. H. Parsons.

2. Indications for Biopsy. Dr. W. H. Parsons.

Discussed by Dr. L. S. Lippincott.

3. Intracranial Hemorrhage in Infants. Dr. Noel C. Womack, Jackson.

Discussed by Drs. G. C. Jarratt, I. C. Knox, and G. W. Gaines.

A Committee composed of Drs. L. J. Clark, A. Street, and J. A. K. Birchett, was appointed to co-operate with the Warren County Health Department.

A committee composed of Drs. W. C. Pool, W. H. Scudder, and L. S. Lippincott, was appointed to make a study of the medical institutions of the state with a view to removing them from politics and increasing their efficiency.

On motion of Dr. E. H. Jones, the society voted to request the Warren County Health Department to establish a list of patients who have recovered from infantile paralysis with a view to obtaining serum for treatment, such a list to be available to all doctors. It was also suggested that a supply of convalescent serum be secured and kept on hand for immediate use.

Drs. H. S. Goodman, W. C. Pool, and E. B. Stribling presented resolutions on the recent death of Dr. L. E. Martin of Anguilla. The resolutions were unanimously adopted.

A special called meeting of the members of the Society from Warren County was held on September 17, with the Mayor and Commissioners of the city of Vicksburg, in the interest of the Warren County Health Department.

Dr. D. A. Pettit, Vicksburg has been enjoying an extended trip to the Pacific Coast.

NORTHEAST MISSISSIPPI THIRTEEN COUNTY MEDICAL SOCIETY.

Following is the program of the third quarterly meeting of the Northeast Mississippi Thirteen County Medical Society at City Hall Building, Corinth on September 16, as reported by Dr. J. M. Acker, Jr., Secretary.

Meeting called to order.—President K. F. McRea.

Invocation.—Rev. Ira D. Holt, Pastor, First Presbyterian Church.

Address of Welcome.—Judge T. H. Johnson.

Response.—Dr. K. F. McRea.

Reading of minutes of the last meeting.

Papers and Discussions:

1. Uterine Hemorrhage.—Dr. V. B. Philpot.—Discussion opened by Drs. M. G. Ewing and R. D. Kirk.

2. The Anemias.—Dr. J. L. McLester, Birmingham, Alabama.—Discussion opened by Drs. W. H. Anderson and Toomer.

3. Organized Medicine.—Dr. M. J. L. Hoye, Vice-President, Mississippi State Medical Association.—Discussion opened by Drs. G. S. Bryan and J. R. Williams.

4. Hospitals, Nurses and Health.—Dr. F. J. Underwood, Jackson.—Discussion opened by Drs. Love and M. W. Robinson.

5. Some Remarks on the Care of So-Called Maternity Cases.—Dr. H. L. Scales.—Discussion opened by Drs. Hill and Eason.

A banquet was enjoyed at 6 p. m. at the High School.

DELTA MEDICAL SOCIETY.

Dr. T. B. Lewis, Greenville, President of the Delta Medical Society, has announced that the regular semi-annual meeting of the Society will be held at Belzoni, October 8. A splendid program is being arranged and it is known that Belzoni will "do the rest."

Dr. Lewis writes, "practically every doctor in Greenville has had his summer vacation, ranging all the way from a few hours' fishing trip to a few weeks spent in their resort homes, and we are back on the job trying to forget what Al Smith said might have been a 'democratic crisis' but is only an 'economic depression (republican)'."

On September 25, Dr. F. Michael Smith, Director of the Warren County Health Department, for the third consecutive year opened his class in Communicable Diseases for second and third year nurses of the hospitals of Vicksburg. As in former years the students will meet once a week for a period of eight months.

Dr. Smith's course has been most successful in the past and his efforts are much appreciated by the hospitals concerned.

PIKE COUNTY MEDICAL SOCIETY.

Dr. I. E. Stennis, Secretary of the Pike County Medical Society furnishes the following:

"Pike County Medical Society held its regular monthly meeting in the McColgan hotel, McComb, on September 4, at 7 p. m. Dr. L. W. Brock, President, presided. Drs. B. L. Crawford and A. B. Harvey, Tylertown, were visitors.

"The program consisted of the following:

"Empyema.—Dr. S. Paul Klotz. Discussion opened by Dr. M. D. Ratcliff, followed by Dr. L. W. Brock. Discussion closed by Dr. Klotz.

"Motion pictures: (1) Emergency operations on liver and bladder for stab and gunshot wounds; (2) Hydrocele, operation; (3) Appendectomy; (4) Colle's fracture; (5) The anatomy of the abdominal viscera. These films were shown by courtesy of the Petrolagar Laboratories, Inc., Chicago.

"The next meeting of the Society will be held October 2 at 7 p. m.

"Dr. J. E. Hewitt, Smithdale, was a patient in the McComb Infirmary during the first two weeks of August, suffering with pneumonia. Dr. Hewitt returned to his home about August 15.

"EAST MISSISSIPPI FOUR COUNTY SOCIETY.

"Underwood's weekly letter has just been read. In one sentence he stated that if you diet and reduce your weight the results will be serious. In another sentence he says if you eat and get too fat you will have fatty degeneration of all the organs. Lots of consolation for a fat man.

"Dr. S. H. Hairston, Meridian, is still confined to his bed on account of several heart attacks which he has had during the past six months. All of his friends sympathize and hope for him in the desperate fight which he is making, and it is hoped that he will come out on top.

"Dr. Leslie Vaughn Rush has decided that he is tired of his life of single blessedness which he has been living, so a few days ago the announcement of his wedding to Miss Katherine Brooks which is to occure October 1, 1930, was made. Dr. Rush is one of our most promising young surgeons, and the young lady, he has so badly fooled is one of the most charming ladies of Meridian. He is to be congratulated, and she is to be commiserated. We all hope that Coleman, Lewis, and Arrington will immediately follow suit.

"Dr. and Mrs. Leonard Hart are spending their vacation on the board walks of Atlantic City. Our friend Hart has not been in good health for some time, and it is hoped that a vacation, which he so seldom takes, will be of great benefit to him.

"At 7:30 p. m. September 5, the Staff Meeting of Rush's Infirmary was held. A very enjoyable time was had. Dr. K. T. Klein reported his experience with sodium amytal. This paper was freely discussed by those present. Dr. I. W. Cooper reported a case which is as yet undiagnosed. It is hoped at some future time that a diagnosis can be made in this case and a complete report made. This case was discussed by several members who had seen the case in consultation.

"Dr. Albert C. Bryan is in the U. S. Veteran's Hospital, Memphis, Tenn. undergoing treatment. Dr. Bryan has been in had shape for some months and finally had to give up.

"We are very sorry to report the continued illness of Dr. T. G. Cleveland, who has been confined to his bed for some time on account of some heart condition. Cleveland is a very valuable man and we hope that he will soon be back well and strong.

"It is with a deep sense of regret that the loss of an infant son of Dr. and Mrs. P. E. Holladay is reported.

"Dr. Eva Strahan is now convalesing from an operation for a ruptured appendix. This condition developed very shortly after she attended the meeting of The East Mississippi Medical Society at the Patrons' Union on July 30, 1930. She is sure this acute attack was brought on by the rough ride given her by Googe and Bennett. Dr. Gully and myself implored her to come back with us, but naturally she wanted to ride with younger and better looking men. We hope that she will soon be back in the game.

"Dr. W. R. Holladay is taking a very much needed rest and vacation. We hope that this rest will be a great benefit to him. Holladay works too hard and takes life too seriously.

"Dr. and Mrs. T. G. Cleveland announce the birth of a daughter whom they have named Martha Francis. This is a very good showing for our society.

"Our society grows stronger and better when the birth of Terry Lee Bennett, Jr., son of Dr. and Mrs. Terry Lee Bennett is announced.

"Please call the attention of President Howard and Dr. and Mrs. R. H. Brumfield to these facts. We hope for 'Bob White' a long life of happiness and pleasure to his father and mother. We also hope that Rush, Coleman, Arrington and Lewis will come along very shortly so that we can keep our birth announcements up to the standard.

"At Rush's Infirmary there was a lovely and accomplished superintendent, but she decided that it was not well for man to live alone, so she changed her name from Mrs. Minetta Gibbens to Mrs. James Smith. Jim Smith is a very popular engineer on the Southern Railroad, and how he fooled this woman no one knows, but he did, and that is her name. The hospital and all her friends hope that no accident will occur and that she will continue as the efficient superintendent at this hospital.

"Miss Margaret Hoye, the lovely and accomplished daughter of our Vice-President and Mrs. M. J. L. Hoye, decided that she was tired of going to school, and of the parental restrictions, drove up to Livingston, Alabama, with Mr. S. M. Ashcraft and they were married. This young lady is a very charming and talented daughter, and Mr. Ashcraft is a valued employee at the East Mississippi State Hospital. Our congratulations and best wishes are extended to this young couple.

"The Southern Medical Association meets at Louisville, Ky., in November and it is hoped that a large number of our doctors will attend this meeting. If they will take time off, attend four or five medical association meetings during the year, and completely relax, there will not be so many sad reports occurring in the newspapers. As councilor of the Southern Medical Association for Mississippi, I hope we will have a large attendance at this meeting at Louisville in November."

I. W. COOPER, M. D.

VICKSBURG SANITARIUM

The regular monthly meeting of the Staff of the Vicksburg Sanitarium was held on September 10. After the usual business of the Staff and the report from the Records Department and Analysis of the Work of the Hospital, the following special case reports were presented:

(1) Acute Intestinal Obstruction.—Dr. G. M. Street.

(2) Cirrhosis of the Liver.—Dr. A. Street.

(3) Compound Fracture of the Lower Leg; Treatment and End Results.—Dr. J. A. K. Birchett, Jr.

(4) A Few Thyro-Cardiac Cases.—Dr. L. J. Clark.

(5) Intracranial Hemorrhage in the New-born. —Dr. G. C. Jarratt.

Selected radiographic studies were demonstrated as follows: Pulmonary tuberculosis; Fracture of both bones of the leg from alligator bite; Fracture of vertebra; and Hypertrophic osteoarthritis with spondylolisthesis.

DR. ETHELBERT H. GALLOWAY.

Dr. Ethelbert H. Galloway, Jackson, died suddenly of a heart attack, August 26. While at the Baptist hospital about four o'clock in the afternoon he was stricken with the first attack. This passing away, he went home and to bed, and shortly after 11 o'clock that night the second attack came and he died before physicians could reach his bed side.

Dr. Galloway was born in Vicksburg, August 21, 1879, the son of the late Bishop and Mrs. Charles Betts Galloway. He moved to Jackson when a lad of about six years of age, and had resided in the house in which he died since his

early boyhood. He received his literary education at Millsaps College, and entered the medical department of Vanderbilt University in 1900, graduating with honors from that institution in 1903, having completed a four-year course in three years. After serving an internship in one of the large hospitals of the East, he served for several months as ship's surgeon on one of the steamers plying between New York and South America. Since then his entire professional life had been spent in Jackson, where he achieved distinction both at a physician and a surgeon.

Since 1918, Dr. Galloway had devoted his time exclusively to the practice of surgery and was well known throughout the South. He was a fellow of the American College of Surgeons and of the American Medical Association and was a member of the Mississippi State Medical Association. During the administration of Governor Earl Brewer, without his solicitiation or knowledge, he was named as Secretary and Medical Director of the State Board of Health, serving with distinction and great benefit to the State. At one time he was Medical Director of the Columbia Woodmen, and held several other positions of honor and distinction in the medical world.

Dr. Galloway is survived by his wife, formerly Miss Mable Johnson, two sons, Charles B. and Belton Galloway, and two sisters Mrs. A. M. Muckenfus, Elizabeth, New Jersey and Mrs. W. G. Jackson, Lenoir City, Tennessee.

DR. J. F. AYCOCK.

Dr. J. F. Aycock was born November 21, 1886 at Pheba, Miss. His father, W. J. Aycock moved to Calhoun County in 1892 and settled near Bently on Topashaw Creek. It was here that Dr. Aycock spent his boyhood days on the farm.

After spending one year in Mississippi College and one in Millsaps College, he entered the Medical College at Memphis, Tenn. He graduated from there in the spring of 1913 and began practicing in the community in which he was reared, In May, 1914, he was married to Miss Johnnie J. Denley of Big Creek. He is survived by his widow and two children.

In 1916 he moved to Slate Springs, and practiced his profession until 1919 at which time he moved to Calhoun City, where he remained until his death on May 15, 1930.

Dr. Aycock practiced until about June, 1929. His health became so impaired that he was forced to give up his practice. He spent his entire professional life in Calhoun County and served his people well. He was always true to his profession, strictly ethical in all his acts. He never incurred the ill will of a fellow practitioner.

Dr. Aycock was a member of the Baptist Church, Knights of Pythias, Exchange Club and Mason.

The community and the medical profession has sustained a great loss in his passing.

JAMES M. ACKER, JR., Secretary,
Northeast Mississippi Medical Society.

COMMITTEE ON VITAL STATISTICS.

Because of his unusual and constant interest in vital statistics as affecting the members and families of the Mississippi State Medical Association this year, it has been suggested by one high in authority that Dr. I. W. Cooper, Meridian, genial and efficient treasurer of the Association, be appointed or declared chairman of a committee on births within the Association. This committee would act as a sort of balance wheel to the committee on necrology. Also because of their interest in such matters, it has been suggested that Drs. Samuel E. Field of Centreville and Dr. J. A. Birchett, Jr., of Vicksburg, should serve as the other members of the committee. If there is no further discussion, the above named gentlemen are designated. They will please take notice and perform the duties of their respective offices with all dispatch.

CENTRAL MEDICIAL SOCIETY.

The third quarterly meeting of the Central Medical Society was held in the banquet hall of the Edwards Hotel Tuesday, September 16. There were 70 members and ten visitors present, this being the best attended meeting of the year. Preceding the banquet and scientific program the following clinic was presented:

1. Dr. J. P. Wall—Case report.

2. Dr. A. G. Wilde—Presentation of a case of Paranaud's conjunctivitis and a case of megalocornea.

3. Dr. Sam H. McLean—Case report of thrombosis of cavernous sinus of penis.

4. Dr. H. R. Shands—Case report of tuberculosis of the spleen.

A most enjoyable banquet was followed by the following scientific program:

a. Agranulocytosis with report of a case.—Drs. Strain and O'Mara, Sanatorium. Discussed by Dr. G. W. F. Rembert, Jackson.

b. The use and Abuse of Sera and Vaccines in Treatment and Prophylaxis of Various Diseases. —Dr. H. C. Mitchell, Memphis, Tenn.

c. Presidential Address.—Dr. E. F. Howard, President, Mississippi State Medical Association, Vicksburg.

Dr. Mitchell's paper was a resume of the latest data on sera and vaccines in various diseases, and extremely interesting to the profession as a whole.

Dr. Howard gave a very timely talk on organization within the State Association emphasizing the important part played by the local societies.

At the business meeting following the program eight new application for membership were presented. The Society now has 114 members and we hope to bring this to 130 by the end of the year.

At the monthly staff meeting of the Baptist Hospital, September 8, 30 members were present and a very interesting program was featured by Dr. Shands' resume of the work observed in Eastern clinics during the summer.

There was no meeting of the staff of the Jackson Infirmary in September.

W. L. HUGHES, Secretary.

MISSISSIPPI MEDICAL INSTITUTIONS.

Is it not about time that the citizens of Mississippi placed the medical institutions of our State beyond the reach of politics and politicians? And, as with everything that has to do with the protection of the public in things medical, has it not become time for the medical profession to make a determined stand in the interest of efficiency and good medicine?

The people of Mississippi and of the whole country have had a great exhibition during the past summer of the workings of political influence on educational institutions. Often in the past they have had similar exhibitions as regards our State charity hospitals and other State institutions. While we as citizens should be interested in all institutions, certainly we as doctors should have a special interest in those that have to do with the training of medical men and the treatment of sufferers from disease.

We are told that the medical department of the University of Mississippi is now back on its old standing as an approved school, and the State is certainly to be congratulated that Dr. Crider is again dean and that Dr. Rowland has been reinstated in the honorable position he has so long held as a member of the faculty. It has brought joy to many to know that in order to bring this about an increase in compensation, always altogether too small, has been a by-effect of all the undesirable advertising the school has received. It will never be known how many students were lost to the institution.

Why cannot our medical institutions be placed under some kind of a civil service or other plan that will recognize ability and efficiency, that will place the best men in positions of responsibility; that will protect them from summary removal for political purposes as long as they maintain desirable standards, and that will provide an incentive for good men to devote their lives and best efforts to the upbuilding of the reputation of Mississippi institutions?

We have in this State a medical institution that is known all over the country as an example of what such institutions should be. Its head is internationally known and is looked up to as a leader and a teacher. That institution could not have reached its present standing if it had been kicked about during the years as have our charity hospitals. Its head, who is responsible, would not be in Mississippi today had he been subject to the same laws as their superintendents. He cannot be removed except for cause, and he has known through the years that his efforts would receive recognition. He has had an incentive to build a monument and the State receives the benefits of that man's work.

How wonderful could be the prospects were our other medical institutions conducted in the same way! There are no finer opportunities for medical teaching in the world than are to be found in these institutions. The men who head them should be given a chance. Frequent changes in any business are expensive. Might it not be that more charity patients might receive better care with permanent organizations?

No criticism of present heads of medical institutions is offered. They are men of ability. But, however efficient their institutions, they would be better institutions and the present heads better heads could it be certain that accomplishment would be recognized and protected and that inefficiency would not be tolerated.

BOOK REVIEWS

The Baby's First Two Years: By Richard D. Smith, M. D., A. B., Sc. D. Boston, Houghton Mifflin Co. 1930. pp. 159.

This is the third edition of this book. It was written just for mothers and will be very useful in answering some of the many perplexing questions which are sure to arise concerning the care and feeding of the baby.

It is divided into three parts. In Part I are rules for the care and feeding of infants; there are minute instructions to the mother regarding the clothes to get for the new baby; there are general rules for the feeding of the child up to two years; and there are also general suggestions of what to do for the sick child till the mother can get in touch with her doctor.

In Part II are suggestions to help the mother who must travel with a baby, and there is given a typical day of the routine care of a normal, healthy child.

In Part III are recipes for the preparation of different articles of food for the baby.

The book is simply written and gives much practical information for the mothers who wishes to know more about the care and feeding of her child.

RENA CRAWFORD, M. D.

Behavior Patterns of the Alimentary Tract: By T. Wingate Todd, M. B., Ch. B. (Manc.), F. R. C. S. (Eng.). Baltimore, Williams & Wilkins Co. 1930. pp. 79.

This book presents a report of a most thorough and comprehensive study of the behavior patterns presented by the alimentary tract to stimuli of local, reflex or central origin. It also treats of the reaction of the stomach to simple stimuli such as milk, water, buttermilk and lactic acid, and the influence upon the stomach and emotions of heat and cold applied to the abdominal wall and by imbibed hot and cold drinks. The work represents over 20 years of study on a group of 400 students of both sexes. It deals with vital and fundamental problems in the human that no one interested in medical advance can afford to overlook. The ability of the author to embrace in a well-told narrative of less than 80 pages, and about one hour of reading, so important a subject is the least of the virtue of this publication. It cannot be too highly commended.

I. L. ROBBINS, M. D.

A Text-Book of Psychiatry for Students and Practitioners: By D. K. Henderson, M. D. (Edin.), F. R. P. S. (Glas.), and R. D. Gillespie, M. D. (Glas.), M. R. C. P., D. P. M. (Lond.) 2d ed. London, Oxford Univ. Pres. 1930. pp. 526.

This splendid volume from the Oxford University Press is the second edition presented by two internationally known members of the profession who have devoted their time to the study of mental and allied disorders. Their method of approach of the abstract of the historical review of the care and treatment of mental disorders is illuminating and in itself is a text necessary to all forms of social hygiene not alone mental. The classification, both British and American, is complete in every detail with a new classification as suggested along the llnes of types of reaction. This is gone into in detail. The etiology in chapter 3 has been presented in a very scientific manner, giving current criticism to the Mendelian theory, marriage and birth control. Lues is also mentioned at length among the causative factors. A very complete method of examination is given, likewise a symptomatology.

Then follows the treatment of the psychoses as such, illustrated by case histories in the more up-to-date form and which is the better method in the reviewer's opinion of teaching students or presenting cases to the medical practitioner who must run as he reads. The organic reaction types and the paragraph on epidemic encephalitis is well written and is an addition to the data already presented by other authors on this enigmatic pathological phenomena.

Epilepsy and mental deficiency are covered only as these two writers can present it. In the chapter on psychoneurosis is given the various interpretations by Bernheim, Charcot, Janet, Freud, DeJerine and Ross. The constitutional inferiority is likewise included. The elaborating on this type of the herd is quite necessary, for, in many medico-legal situations, the question of emotional reactions, plus adaptability and mal adjustment should be considered in determining cases for sentence or pardon, or commitment to institutions for mental disorders.

The chapter on military psychoses and psychoneurosis is adequately covered. This is followed by the concluding chapter on the medico-legal relations as pertaining to mental and allied disorders. While the same legal jurisprudence does not apply to the States as to the United Kingdom, there are many points that are well brought out.

A bibliography is appended. This volume should be included in the library of all neuropsychiatrists, lawyers and medical libraries, inasmuch as it brings to us the very latest treatise in the fields of psychiatry.

WALTER J. OTIS, M. D.

Diseases of the Nose, Throat and Ear, Medical and Surgical: By William Lincoln Ballenger, M. D., F. A. C. S. Revised by Howard Charles Ballenger, M. D., F. A. C. S. 6th ed. Philadelphia, Lea & Febiger. 1930. pp. 1138.

To those of us specializing in diseases of the nose, throat and ear, Ballenger's book has been an old and valued friend. The new edition follows the same clear and concise exposition of the subject that made the older editions popular, and has been so extensively revised as to keep it in the front rank of books on this subject.

The section on bronchoscopy by Gabriel Tucker and Chevalier L. Jackson is beautifully written and remarkably informative even though necessarily condensed.

There is a very interesting description of hemolytic streptococcic throat (upper respiratory tract) infection and its frequent association with bacteremia.

Dr. Alfred Lewy has contributed a very able discussion on physiology and functional tests of the labyrinth, inflammatory diseases of the labyrinth, indications for operations on the labyrinth and concussion and fracture of the labyrinth.

The section on tracheotomy still adheres to the statement in former editions, "high tracheotomy is preferable," a dictum with which most laryngologists will not agree on account of the great danger of cicatricial stenosis of the larynx which attends the wearing of a tracheotomy tube through a high tracheotomy incision.

The book has the whole-hearted recommendation of the reviewer, who believes that it will continue to be the valued work of reference that its preceding editions have been.

H. KEARNEY, M. D.

Practical Psychology and Psychiatry: By C. W. Burr, M. D. 6th ed., rev. and enl. Philadelphia, F. A. Davis Co. 1930. pp. 378.

This volume is a revision, enlargement and elaboration of previous editions. It is written in a rather mixed vein, composed of literary, explanatory, analytical and iconoclastic explanations.

The first part deals with the psychobiology shading into abnormal functions.

The second part treats of symbolisms in sanity and insanity. This is well written and an abstract to meet the demands of the present day reader of medical books.

The third part deals strictly and entirely with insanity — definitions, classifications and modern terminology though the reviewer found no mention of psychopathies as classified under the authorized nomenclature of the National Committee for Mental Hygiene. This classification, I think, is necessary with its adjunct, constitutional inferiorities, inasmuch as the medico-legal world is today encountering such problems in their prisons and abnormals.

The fourth part deals with the management and care of mental disorders. It is written only as a teacher and neuropsychiatrist of Dr. Burr's standing can write for the public. Especial reference must be made to that part which deals with the nursing of these cases. There is much of the humanities injected into the treatment of this subject. This is most necessarry and overlooked by some other authors when preparing books for publication. As is the example set by physicians in an institution for the care and treatment of mental and nervous disorders, so is the emulation by the nursing itself.

The prevention of insanity is covered in the fifth part with a very comprehensive treatise on mental hygiene dealing with child guidance, puericulture, habit formation, and last, the question of eugenics as regards the marriage of those so unfortunate to have had a phychosis or psycho-neurosis. The author here is very conservative, stating that in most cases the particular situation is a low unto itself. This is a very healthy advice coming from a man whose experiences, actual contact, and extensive training has placed him on one of the highest peaks of the neuro-psychiatric world.

The alpha of this volume opens with the phrase, "What is life?" The omega of the same, states, "Shall psychotics procreate?"

WALTER J. OTIS, M. D.

Burns: Types, Pathology and Management: By George T. Pack, B. S., M. D., and A. Hobson Davis, B. S., M. D. Philadelphia, J. B. Lippincott. 1930. pp. 364.

The book was compiled by pathologists. It is interesting particularly because there is much historical data and an excellent bibliography up to 1927.

In the chapter on toxemia produced by burns and scalds all of the theories that have been suggested with reference to the causes of the toxemia are recounted. After enumerating exactly twenty-four theories the authors conclude "the toxin of burns is unknown."

In the chapter which relates to treatment an under-graduate would certainly be perplexed because all of the many suggestions which have been made from the time of Samuel D. Gross are included. "Samuel D. Gross in 1866 recommended sinapisms to the extremities to counteract the depression."

In the next paragraph the authors state "when shock exists the temperature falls and collapse ensues, the heat-regulating centre sharing in the nervous depression."

On the next page we find a sentence which is additional evidence of a loose use of words. The authors speaks of a "fairly sterile" condition.

Under General Measures the authors state "when fever approaches 103 degrees F. relief is best obtained by sponging with tepid water or alcohol." It may readily be seen that an application of alcohol to the burn may cause the patient pain.

The book gives the impression that it is a library book.

On page 221 one is impressed by the painfully academic nature of the book. The authors state "Adhesions imply those conditions in which during cicatrization, contiguous tissues or surfaces which in their natural state move freely on each other, have become mutually adherent, thereby abridging voluntary motion, as when a cicatrix adheres firmly to a muscle, tendon, or aponeurosis; or these latter to one another."

There are apparently contradictions in many places of the book, but it is especially noticed on the opposite page, 222, where the following statements are found: "Splints, adhesive plaster, elastic bands and extension apparatuses to prevent contractures must be continuously applied night and day." On the next page they state that "the scar can be softened and made more elastic by the continuous application of moist warm packs for a long period of time." It is difficult to imagine how splints can be applied and at the same time moist compresses.

The chapter on deformities following a burn gives the wrong impressions of the difficulties encountered in the management of these horrible deformities. Reference to the work of Gillies, Vilray Blair, John Staige Davis and others will better fit the student of plastic surgery for his work than an attempt to do such extensive work with only this volume as a guide.

It is rather surprising that in the chapter on burns by gases no mention is made of the recent valuable suggestions which have been made regarding the handling of roentgen-ray films as a prophylactic measure.

On the whole I believe that the student of the subject of burns will probably get a great deal more usable information by reading Davidson's or Cutting's short articles on the subject of burns; and certainly the ones interested in plastic repair will do well to read carefully and follow the details of management laid down by Blair or Davis before attempting reconstructive operations.

ISIDORE COHN, M. D.

Human Biology and Racial Welfare: Ed. by E. V. Cowdry. New York, Paul B. Hoeber, Inc. 1930. pp. 612.

A book by specialists concerning specialties which have to do with human welfare. It deals with the past, the present and the future of the human race. It takes up man's origin and evolution, mentally and physically; the influence of his environment upon his making and what all this has to offer as an idea of the future man. The distinction of the men who contribute to this volume is enough to testify to the excellence of the book.

It is written simply and effectively and may be read with interest and pleasure by laymen and scientest. Such indeed is the intention of the authors.

I. L. ROBBINS, M. D.

PUBLICATIONS RECEIVED.

The Appleton and Company, New York and London: Diseases of the Genito-urinary System in Infancy and Childhood, by Henry F. Helmholz, M. D., and Samuel Amberg, M. D. Clinical Pediatrics, XIX, Laboratory Pediatrics, by John D. Lyttle, A. B., M. D. Clinical Pediatrics, XX. Composite Index and Cumulative Supplement. Clinical Pediatrics, XX. A Text-Book of Histology, by Harvey Ernest Jordan, A. M., Ph. D. The Principles and Practice of Medicine, by the late Sir William Osler, Bt., M. D., F. R. S.

The Williams & Wilkens Company, Baltimore: Seventy Birth Control Clinics, by Caroline Hadley Robinson.

P. Blakiston's Son & Co., Inc., Philadelphia: Text-Book of Anatomy and Physiology, by Elizabeth R. Bundy, M. D.

The W. B. Saunders Company, Philadelphia and London: Diseases of the Skin, by George Clinton Andrews, A. B., M. D. A Text-Book of Histology, by Alexander A. Maximow.

Paul B. Hoeber, Inc., New York: History of Haitian Medicine, by Robert P. Parsons. The Candiru the Only Vertebrate Parasite of Man, by Eugene Willis Gudger, Ph. D. Stalkers of Pestilence, by Wade W. Oliver, M. D. Arterial Hypertension, by Edward Stieglitz, M. S., M. D. Nervous Indigestion, by Walter C. Alvarez.

Oxford University Press, London. Dosage Tablets for Roentgen Therapy, by Friedrick Voltz. Aphasia in Children, by Alex W. G. Ewing. Practical Midwifery for Nurses, by Bethel Solomons.

The Macmillan Company, New York: Problems and Methods of Research in Protozoology, by Hegner and Andrews. Handbook of Pediatric Procedures, by Francis Scott Smyth, Edith I. M. Irvine Jones.